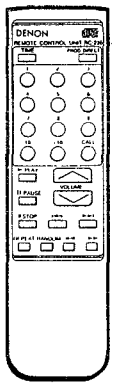
DENON

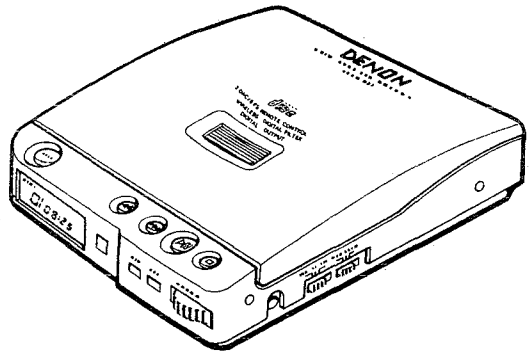
Hi-Fi Component

SERVICE MANUAL

MODEL DCP-150

PORTABLE CD PLAYER





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NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

- **AUDIO**

No. of channels:	2 channels
Frequency response:	20 Hz ~ 20 kHz
Dynamic range:	97 dB
S/N ratio:	98 dB
Harmonic distortion:	0.006% (1 kHz)
Wow & flutter:	Below measurable limits (±0.001% W. peak)
Output voltage:	LINE OUT jack: 3.5 mm dia. stereo mini jack 0.7 V (when using batteries) 1.4 V (when using AC adaptor or car adaptor)
Filter:	8-times oversampling digital filter

- **USABLE DISCS**

Compact discs	Diameter: 120 mm/80 mm

- **PICKUP**

Type:	Driven objective lens type optical pickup
Objective lens driving:	2-dimensional parallel driving
Optical source:	Semiconductor laser
Wavelength:	780 nm

- **POWER SUPPLY, ETC.**

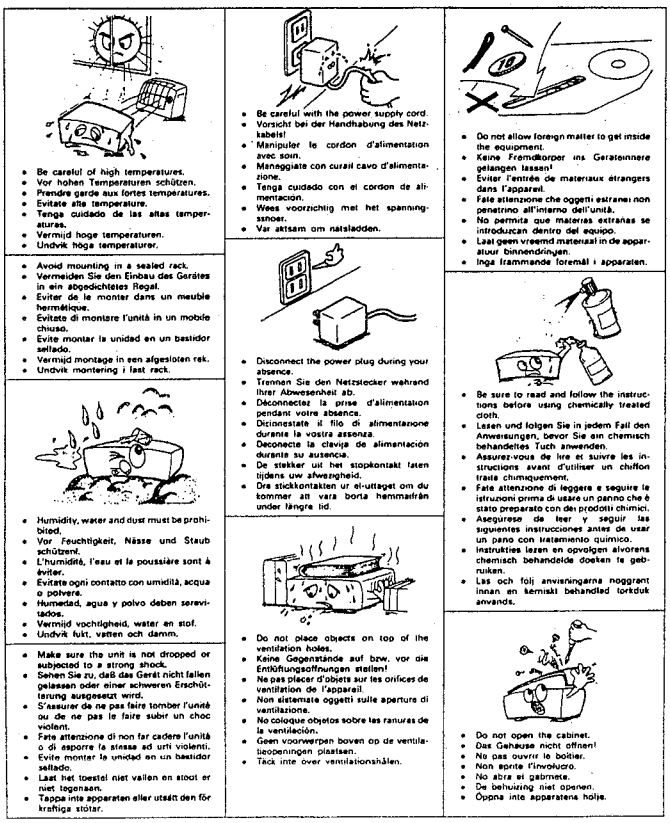
Power supply:	The voltage rating of the AC power adaptor (supplied) varies depending on the country of destination. 12V car battery by connecting car adaptor (sold separately)
Power consumption:	1.8 W
External dimensions:	136 (W) × 37 (H) × 167 (D) mm (5-23/64" × 1-29/64" × 6-37/64")
Weight:	690 g (approx. 1 lb 8 oz)

- **Remote Control Unit** RC-236

Remote control system:	Infrared pulses
Power source:	DC3V, two R6P/AA (SUM 3) batteries
External dimensions:	48 (W) × 177 (H) × 18 (D) mm (1-57/64" × 6-31/32" × 45/64")
Weight:	100 g (including batteries) (approx. 3.5 oz)

* Specifications and contents are subject to change without notice for purposes of improvement.

NOTE ON USE/HINWEISE ZUM GEBRAUCH/OBSERVATIONS RELATIVES A L'UTILISATION
NOTE SULL'USO/NOTAS SOBRE EL USO/ALVORENS TE GEBRUIKEN/OBSERVERA


• Be careful of high temperatures.
• Vor hohen Temperaturen schützen.
• Prendre garde aux fortes températures.
• Evitate alte temperature.
• Tenga cuidado de las altas temperaturas.
• Vermijd hoge temperaturen.
• Undvik höga temperaturer.
• Avoid mounting in a sealed rack.
• Vermeiden Sie den Einbau des Gerätes in ein abgedichtetes Regal.
• Eviter de le monter dans un meuble hermétique.
• Evitate di montare l'unità in un mobile chiuso.
• Evite montar la unidad en un bastidor sellado.
• Vermijd montage in een afgesloten rek.
• Undvik montering i fast rack.
• Humidity, water and dust must be prohibited.
• Vor Feuchtigkeit, Nässe und Staub schützen!
• L'humidité, l'eau et la poussière sont à éviter.
• Evitate ogni contatto con umidità, acqua o polvere.
• Humedad, agua y polvo deben serevitados.
• Vermijd vochtigheid, water en stof.
• Undvik fukt, vatten och damm.
• Make sure the unit is not dropped or subjected to a strong shock.
• Sehen Sie zu, daß das Gerät nicht fallen gelassen oder einer schweren Erschütterung ausgesetzt wird.
• S'assurer de ne pas faire tomber l'unité ou de ne pas le faire subir un choc violent.
• Fate attenzione di non far cadere l'unità o di esporre la stesse ad urti violenti.
• Evite montar la unidad en un bastidor sellado.
• Laat het toestel niet vallen en stoot er niet tegenaan.
• Tappa inte apparaten eller utsätt den för kraftiga stötar.
• Be careful with the power supply cord.
• Vorsicht bei der Handhabung des Netzkabels!
• Manipuler le cordon d'alimentation avec soin.
• Maneggiate con curail cavo d'alimentazione.
• Tenga cuidado con el cordon de alimentacion.
• Wees voorzichtig met het spanningsnoer.
• Var aktsam om nätsladden.
• Disconnect the power plug during your absence.
• Trennen Sie den Netzstecker wahrend Ihrer Abwesenheit ab.
• Déconnectez la prise d'alimentation pendant votre absence.
• Ditinnestate il filo di alimentazione durante la vostra assenza.
• Desconecte la clavija de alimentación durante su ausencia.
• De stekker uit het stopkontakt laten tijdens uw afwezigheid.
• Dra stickkontakten ur el-uttaget om du kommer att vara borta hemmaifrån under längre tid.
• Do not place objects on top of the ventilation holes.
• Keine Gegenstände auf bzw. vor die Entlüftungsoffnungen stellen!
• Ne pas placer d'objets sur les orifices de ventilation de l'appareil.
• Non sistemate oggetti sulle aperture di ventilazione.
• No coloque objetos sobre las ranures de la ventilación.
• Geen voorwerpen boven op de ventilatieopeningen plaatsen.
• Täck inte over ventilationshålen.
• Do not allow foreign matter to get inside the equipment.
• Keine Fremdkörper ins Geräteinnere gelangen lassen!
• Eviter l'entrée de materiaux étrangers dans l'appareil.
• Fate attenzione che oggetti estranei non penetrino all'interno dell'unità.
• No permita que materias extrañas se introduzcan dentro del equipo.
• Laat geen vreemd materiaal in de apparatuur binnendringen.
• Inga främmande föremål i apparaten.
• Be sure to read and follow the instructions before using chemically treated cloth.
• Lesen und folgen Sie in jedem Fall den Anweisungen, bevor Sie ein chemisch behandeltes Tuch anwenden.
• Assurez-vous de lire et suivre les instructions avant d'utiliser un chiffon traité chimiquement.
• Fate attenzione di leggere e seguire le istruzioni prima di usare un panno che è stato preparato con dei prodotti chimici.
• Asegúrese de leer y seguir las siguientes instrucciones antes de usar un pano con tratamiento quimico.
• Instructies lezen en opvolgen alvorens chemisch behandelde doeken te gebruiken.
• Las och följ anvisningarna noggrant innan en kemiskt behandlad torkduk används.
• Do not open the cabinet.
• Das Gehäuse nicht öffnen!
• Ne pas ouvrir le boîtier.
• Non aprite l'involucro.
• No abra el gabinete.
• De behuizing niet openen.
• Öppna inte apparatens hölje.

IMPORTANT (BRITISH MODEL ONLY)

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral Brown: Live

The colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

"CLASS 1 LASER PRODUCT"

ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSAETTELSE FOR STRÅLING.

VAROITUS: LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

VARNING: OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERATS, KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING, SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

IMPORTANT
(CANADIAN MODEL ONLY)

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus setout in the Radio Interference Regulations of the Canadian Department of Communication.

For lens cleaning, use of the blower brushes readily available for cameras and carefully wipe the lens.
To clean the cabinet, wipe with a soft cloth. When very dirty, moisten the cloth with a little water and then wipe.

Verwenden Sie für die Reinigung der Linse die im Handel für Kameras erhältlichen Kamerabürsten und wischen Sie die Linse behutsam ab.
Wischen Sie es zur Reinigung des Gehäuse mit einem weichen Tuch ab. Ist das Gehäuse stark verschmutzt, feuchten Sie das Tuch mit ein wenig Wasser an, und wischen Sie es dann ab.

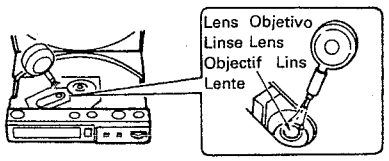
Pour le nettoyage de l'objectif, utiliser les brosses soufflantes disponibles pour les caméras et essuyer délicatement l'objectif.
Pour nettoyer le coffret, l'essuyer avec un chiffon doux. Lorsqu'il est très sale, mouiller le chiffon avec un peu d'eau et l'essuyer ensuite.

Usate una spazzola apposita per macchinette fotografiche per la pulizia della lente e strofinatela attentamente.
Per pulire l'involucro, strofinatelo con un panno morbido. Qualora fosse molto sporco, inimidite il panno in un po' di acqua e strofinate quindi la superficie.

Para la limpieza del lente, emplee pinceles sopladores para cámaras fotográficas. Limpie cuidadosamente el lente.
Para limpiar el gabinete, use un paño suave. Cuando esté demasiado sucio, humedezca el paño con un poco de agua.

Voor het reinigen van de lens, de lensdoekjes gebruiken die in de verkoop zijn voor kamera's, en de lens zorgvuldig hiermee schoonvegen.
De kast schoonmaken met een zacht doekje. Bij hardnekkig vuil, het doekje bevochtigen met een beetje water en daarna de kast hiermee schoonvegen.

Använd en luftborste av den typ som säljs för kameror för att göra rent linsen. Borsta linsen försiktigt.
Höljet görs rent med en mjuk trasa. Är höljet mycket smutsigt kan trasan fuktas i lite vatten före torkningen.



The DCP-150 uses a semiconductor laser.
- CD players use semiconductor lasers. To guarantee stable operation, we recommend using the player at a temperature of between 5° to 35°C (41° to 95°F).

Der CD-Spieler DCP-150 ist mit einem Halbleiter-Laser versehen.
- Für CD-Spieler werden Halbleiter-Laser verwendet. Für die Sicherstellung eines stabilen Betriebes empfehlen wir, daß der CD-Spieler bei einer Temperatur zwischen 5° bis 35°C (41° bis 95°F) verwendet wird.

Le DCP-150 utilise un laser à semiconducteur.
- Les lecteurs de CD utilisent des lasers à semi-conducteur. Pour garantir un fonctionnement stable, il est recommandé d'utiliser le lecteur à une température située entre 5° et 35°C (41° et 95°F).

Il DCP-150 utilizza un laser semiconduttivo.
- I lettori CD utilizzano dei laser semiconduttivi. Per garantire un funzionamento stabile, vi raccomandiamo di usare il lettore ad una temperatura da 5° a 35°C (da 41° a 95°F).

El DCP-150 utiliza un semiconductor láser.
- Los reproductores CD emplean semiconductores láser. Para garantizar una operación estable, le recomendamos emplear el reproductor dentro de un margen de temperatura de 5° a 35°C (41° a 95°F).

De DCP-150 maakt gebruik van een halfgeleider laser.
- Kompakt diskspelers maken gebruik van halfgeleider lasers. Om verzekerd te zijn van een stabiele werking bevelen wij een bedrijfstemperatuur voor werking van de speler van tussen de 5° en 35°C aan.

Halvledarlasern i DCP-150.
- I CD-spelare används halvledarlasrar. För garanterat stabil drift rekommenderar vi att spelaren endast används vid temperaturer mellan 5° och 35°C.

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The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

1 FEATURES

The DCP-150 is a portable CD player designed to offer Denon's quality sound.

(1) 8 times oversampling digital filter
The use of an 8-times oversampling digital filter makes for excellent sound quality.

(2) Preset equalizer
The preset equalizer makes it possible to select the desired setting for the headphones.

(3) Standard remote control unit
The DCP-150 comes with a remote control unit (RC-236), so it can be operated from a distance.

(4) Compatibility with 8 cm CD singles
8 cm CD singles can be played without using an adaptor.

(5) Suede-type finish
The DCP-150 uses a suede-type finish with a luxury look and a nice touch.

2 NOTES

Please check to make sure the following items are included with the main unit in the carton:

1 Operating Instructions 1
2 Warranty Card 1
3 Connecting Cord 1
4 Remote Controller (RC-236) 1
(Attached R6P/AA Batteries 2 pcs)
5 Carrying Case 1
6 AC adaptor 1

NOTE:
This unit may cause interference to radio and television reception if you do not operate it in strict accordance with this OPERATING INSTRUCTIONS.

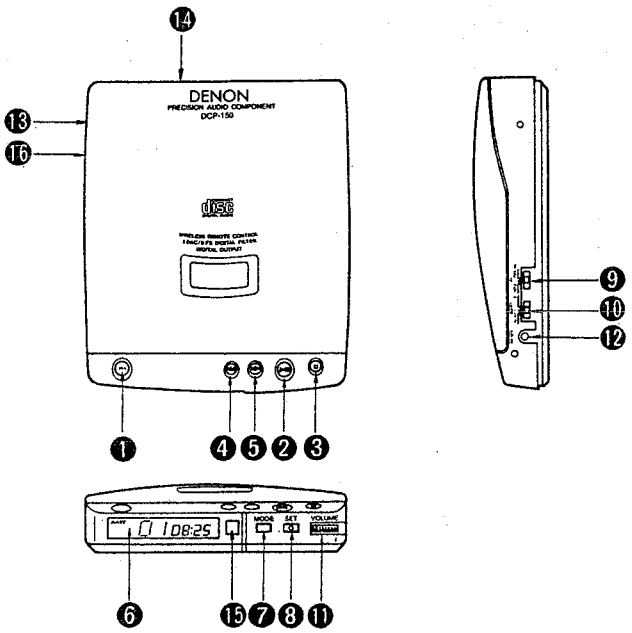
This unit complies with Class B computing device rules in accordance with the specifications in Sub-part J or Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If the unit does cause interference to any radio or television reception, try to reduce it by one or more of the following means:

a) Turn the other unit to improve reception
b) Move this unit
c) Move this unit away from others
d) Plug this unit respectively into a different AC outlet

*** This note is in accordance with Section 15.838 of the FCC Rules.**

CAUTION!
• **Only models on which there is a voltage selector on the AC adaptor.**
This equipment is provided with a line voltage selector.
Before inserting the power plug, please check if this voltage corresponds with the line voltage in your area.
If it does not, be sure to adjust the voltage selector switch to the proper setting before operating this equipment.
The voltage selector switch is located on the top of the power supply unit. Simply insert a screw into the voltage selector switch and turn it in either direction.
Damage to equipment due to voltage selector missetting is not within the limits of DENON liability.

3 PART NAMES AND FUNCTIONS



❶ Open button (OPEN)
- Press this button to open the top cover.
- The player is automatically set to the stop mode.

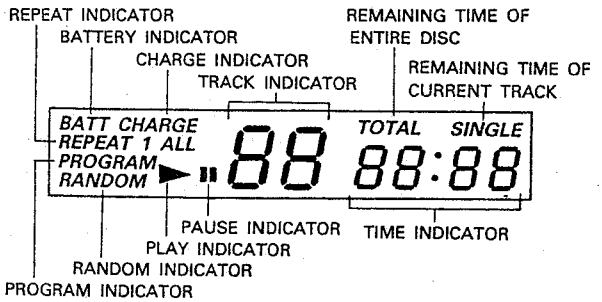
❷ PLAY/PAUSE button (▷II)
- Use this button to start and pause playback.
  When pressed while the power is off, the power turns on, the ▶ indicator lights, and the number of the track currently playing and its elapsed playing time are displayed.
- Once the last track is played, the ▶ indicator turns off and the stop mode is set.
- When pressed during playback, the II indicator lights and playback is paused.
- Press the button once again to cancel the pause mode.

❸ Stop button (□)
- Press this button to stop playback.
- When pressed, the disc stops turning, the display turns off, and the player is set to the stop mode.
- The power turns off after the player is set to the stop mode.
- When using on batteries, the remote control unit will stop functioning three minutes after the power is turned off.

❹ Reverse button (I◀◀)
- Press this button to search for the beginning of previous tracks.
- The pickup moves back the number of tracks equal to the number of times this button is pressed during the playback or pause mode.
- If this button is held in for more than 0.5 seconds during playback, the manual reverse mode is set and the disc is reversed at high speed.

❺ Forward button (▶▶I)
- Press this button to search for the beginning of following tracks.
- The pickup moves forward the number of tracks equal to the number of times this button is pressed during the playback or pause mode.
- If this button is held in for more than 0.5 seconds during playback, the manual forward mode is set and the disc is forwarded at high speed.

❻ Display window
- The display window displays such information as the track numbers and the playing time.



❼ Mode button (MODE)
- Use this button to switch between the repeat, random, and programmed play modes.

❽ Set button (SET)
- This button is used to select the desired indication on the TIME display. The indication on this display will change each time the button is pressed.
  Normally, the elapsed playback time of the current track is displayed.
  Pressing the button once, SINGLE is displayed and the remaining time of the current track is displayed.
  Pressing once more, TOTAL is displayed, and total playing time of remaining tracks is displayed. However, when programmed play is in progress, the total remaining time of the program is displayed.
  Press the button once again to return to the normal display of the elapsed playback time of the current track.
- The track currently displayed is programmed when this button is pressed during the program input mode.

❾ Hold/Resume switch (HOLD/RESUME)
- When this switch is set to the HOLD position, only the OPEN and SET buttons and preset equalizer switch will function, preventing accidental operation. (The remote control unit will operate.)
- The resume function operates when the switch is set to the RESUME position.

❿ Preset equalizer switch (NORM, BOOST 1, 2)
- Use this switch to select one of three equalizer settings for the headphones.
- Boost 1 emphasizes bass, and Boost 2 emphasizes bass and treble.

⓫ Volume control (VOLUME)
- Use this control to adjust the volume of the headphones.

⓬ Headphones jack (PHONES)
- Use 3.5 mm mini-plug type stereo headphones.

⓭ Line out jacks (LINE OUT)
- Use these jacks to connect the DCP-150 to a Hi-Fi amplifier in your home or to a car audio system.

⓮ DC IN JACK
- External power supply jack (DC IN 6V).

⓯ Remote control unit sensor
- This sensor receives signals from the included remote control unit (RC-236).

⓰ Digital output jack (DIGITAL OUT)
- This jack outputs digital data.
- Signals are only output when using the AC adaptor (or separately sold car adaptor).

CAUTION
DIGITAL OUT jack:
- Remove the cap from the jack, and connect it to an audio component equipped with a digital input jack using an adaptor plug (ϕ3.5 mm monaural plug/pin plug) and a 75 ohms pin cord.

- Keep the cap on when not using the jack.
- Never connect the DIGITAL OUT jack to an analog input on an amplifier, as this could damage the amplifier or speakers.
- Do not connect stereo plugs to the digital out jack.

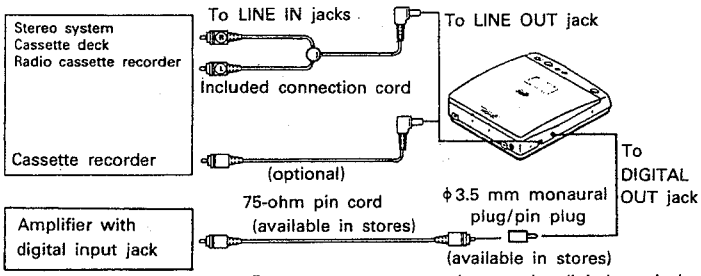
LINE OUT jack:

- The output voltage of the LINE OUT jack is 1.4V when using the AC adaptor (or separately sold car adaptor).
- The output voltage of the LINE OUT jack is 0.7V when using on the batteries.
- Do not connect or disconnect the AC adaptor (or separately sold car adaptor) when sound is being output from the LINE OUT jack.

4 CONNECTION

Connecting Other Equipment

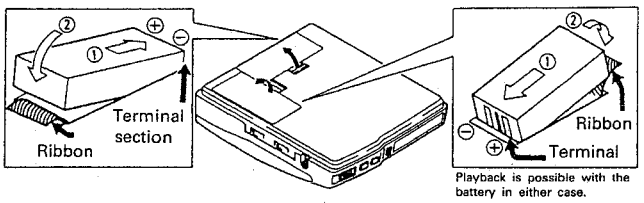
To listen with speakers or to record:



Do not connect stereo plugs to the digital out jack.

NOTES:

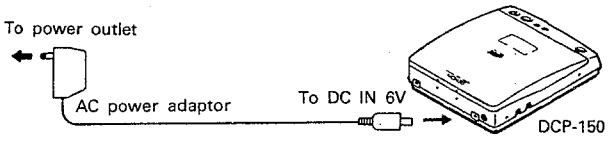
- Be sure to turn off the power of all components before making connections.
- Connect the white plug of the included connection cord to the left (L) channel, the red plug to the right (R) channel.
- Do not connect the LINE OUT jacks to the PHONO jacks on an amplifier.
- Insert the plugs securely. Incomplete connections can cause noise.
- If the player causes interference in a nearby radio or tuner, either move it away or turn off the power.



- Extend the ribbon outside the case when inserting the battery pack into the unit. If the ribbon is left inside, the battery pack becomes difficult to remove.

Charging

- Charge the rechargeable battery before using it for the first time. (There are two battery compartments on the bottom of the unit. The battery can be recharged in either of these compartments.)



"BATT" and "CHARGE" appear on the display when charging starts, and turn off once charging is completed.
For recharging one battery: Approximately 3 hours.
For recharging two batteries: Approximately 5 hours.

- The separately sold AP-10 battery charger is also available.
- When starting to charge in the stop mode, first set the batteries in the unit then insert the AC adaptor.

Playing Time

- One recharged battery: The unit will operate continuously for approximately 2 hours.
  Two recharged batteries: The unit will operate continuously for approximately 4 hours.

Cautions on Using Battery Pack

- Always use the included AC power adaptor when charging. Charging is not possible during playback.
- Do not expose the battery pack to flames.
- Do not short the battery terminals.

- Use the accompanying connection cord with the line output jack.
- The φ3.5 mm diameter monaural plug/pin plug adapter, which is connected to the digital output jack, accepts plugs with a maximum diameter of φ9 mm or less.

5 ABOUT COMPACT DISCS

(1) Cautions on handling compact discs

- Do not allow fingerprints, oil or dust on the surface of the compact disc. If the signal surface is dirty, wipe it off with a soft, dry cloth.
- Do not use benzene, thinner, water, record spray, electrostatic proof chemicals, or silicone-treated cloths to clean discs.
- Always use care when handling discs to prevent damaging the surface, in particular when removing discs from and setting them back in their cases.
- Do not bend compact discs.
- Do not apply heat to compact discs.
- Do not enlarge the hole in the center of the disc.
- Do not write on the labelled surface (printed surface) of the disc.
- Condensation will form on the disc surface if it is brought into a warm room from a cold place, such as outdoors in the winter. Wait until the condensation dries off. Never dry discs with hair dryers, etc.

(2) Cautions on storage

- After playing a disc, always remove it from the player.
- Always store discs in their cases to protect them from dust, scratches, warping, etc.
- Do not set discs in the following places:
  1. Places exposed to direct sunlight for long periods of time.
  2. Humid or dusty places.
  3. Places exposed to high temperatures, such as close to heaters, etc.

6 BATTERIES

Using Rechargeable Batteries

- One rechargeable battery is included with the DCP-150 set.
- This unit can use up to two rechargeable batteries.
  (The separately sold AP-11 rechargeable battery is available).

Setting the batteries

- Be careful not to sandwich the ribbon then closing the cover.

- When using two battery back units, be sure to use the battery pack that has been charged.
- Do not charge continuously for over 24 hours.
- Be sure to give the batteries a supplementary charge after using then regardless of whether they were used for a long or a short period. Do this also once every 6 months when the batteries have not been used. When the batteries are going to be used again, first charge them for about 30 minutes.
- Do not disassemble the battery pack. If the electrolyte (which contains sulfuric acid) should leak and get on your clothes or skin, either flush it with large quantities of water or neutralize it with ammonia water or sodium bicarbonate (baking soda).

Battery Pack Service Life

- Repeated charging and discharging shortens the operating time. Replace the battery pack if after charging it the operating time at normal temperatures drops to one half the original time.
- The SONY BP-2, BP-2EX battery packs can also be used.

Using a Household Outlet

- Use the included AC power adaptor.
  Connections are the same as when charging.

NOTE:

Use a Denon-recommended AC power adaptor (AA-8) or the equivalent.

Using in Cars

- Use a car adaptor (sold separately).

NOTE:

- Temperatures tend to be very high on the dashboard and inside closed cars. Do not keep the player in such places.
- When not using, disconnect the player from the cigarette lighter. Failure to do so may wear out the battery.
- Please use the specified adaptor when an adaptor is used to operate the unit from the car power supply. Use of an adaptor other than the specified one may result in the unit not operating at all, or generation of noise.

BATT Indicator

- The BATT indicator starts flashing during playback using batteries when the battery power gets low. If this happens, charge the batteries.

* It may not be possible to play discs which do not conform to compact disc standards (discs on which signals are recorded over an area greater than 116 mm, severely warped discs, etc.)

7 REGULAR PLAYBACK

First, follow the steps below to play a disc.

(1) Starting Playback

Load the disc and press the PLAY/PAUSE button (▷II). The power turns on and playback begins.

- The track number and elapsed time of the track being played are displayed.

(2) Stopping Playback

Press the Stop button (□).

- Once all tracks on the disc have been played, the stop mode is set automatically and the power is turned off.

NOTE:

- When using on batteries, the remote control unit will stop functioning three minutes after the power is turned off.
- The stop mode is set automatically and the power is turned off if no disc is loaded or if the disc is loaded upside-down. Load the disc properly.
- If the disc is dirty or scratched, the remaining time per track or the total remaining time may not be displayed.

(3) Listening While Searching ..... Manual Search

- With this function you can listen to the sound while skipping through the disc.
  This function comes in handy for searching for a certain part of a long number.
- Once you have found the desired part with the manual search operation, simply release the Search Forward button (▶▶I) or Search Reverse button (I◀◀) to resume normal playback.

1) Manual Search Forward

During playback, press and hold in the Search Forward button (▶▶I) to skip through the disc.

- The track number and elapsed time for the track through which you are skipping are shown on the display.
- If the manual search operation is done during the pause mode, the pickup will move about 3 times faster than during the play mode, but no sound will be heard.
- If the end of the last track on the disc is reached while you are holding the Search Forward button (▶▶I), "JJ" will appear on the display and the manual search operation will stop.
  To resume playback, press the Search Reverse button (I◀◀) until the "JJ" disappears, then do a different operation.

2) Manual Search Reverse

During playback, press and hold in the Search Reverse button (I◀◀) to skip through the disc.

- The display shows the same information as during the manual search forward operation.
- If the manual search operation is done during the pause mode, the pickup will move about 3 times faster than during the play mode, but no sound will be heard.

8 STARTING FROM A SPECIFIC PLACE

(1) Moving to the Next Track During Playback ..... Automatic Search

Press the Search Forward button (▶▶I) and release your finger within 0.5 seconds.

- You can move on to subsequent tracks by lightly touching the Search Forward button (▶▶I) again during the search operation.

(2) Returning to the Beginning of the Current Track During Playback

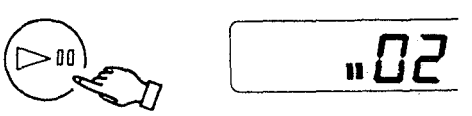
Press the Search Reverse button (I◀◀) and release your finger within 0.5 seconds.

- You can move on to preceding tracks by lightly touching the Search Reverse button (I◀◀) again during the search operation.

- If the automatic search operation is done during the pause mode, the pickup will pause at the beginning of the track.
- If the beginning of the first track on the disc is reached while you are holding the Search Reverse button (I◀◀), "CC" will appear on the display and the manual search operation will stop.
  To resume playback, press the Search Forward button (▶▶I) until the "CC" disappears, then do a different operation.

Stopping Playback Temporarily

- Press the PLAY/PAUSE button (▷II) during playback to stop temporarily.



To resume playback, press the PLAY/PAUSE button (▷II) again.

8 cm CD singles

- The DCP-150 allows 8 cm CD singles to be played without an adaptor.

9 OTHER PLAYBACK MODES

- Press the MODE button during playback to switch the playback mode. To stop playback, press the Stop button (□).

(1) Repeating One Track Only ..... **Single Repeat**

- When the end of that track is reached, the pickup returns to the beginning of that track and the track is repeated.

(2) Repeating All Tracks ..... **All Repeat**

- When the end of the disc reached, the pickup returns to the beginning of the disc and the entire disc is repeated.

(3) Playing in Random Order ..... **Random Playback**

- After the current track is played, all the tracks on the disc are played in random order.

(4) Repeating in Random Order ..... **Random Repeat**

- After the current track is played, all the tracks on the disc are played in random order and repeated.

(5) Playing Specific Tracks in a Specific Order ..... **Programmed Playback**

- With this function, you can choose tracks to be played in a certain order.

(6) Repeating Specific Tracks in a Specific Order ..... **Programmed Repeat**

- With this function, you can choose tracks to be played and repeated in a certain order.

(7) Playing Specific Tracks in Random Order ..... **Random Programmed Playback**

- With this function, you can choose tracks to be played in random order.

(8) Repeating Specific Tracks in Random Order ..... **Random Programmed Repeat**

- With this function, you can choose tracks to be played and repeated in random order.

Press the MODE button again to resume normal playback.

- Pressing the MODE button and the SET button simultaneously sets the normal play mode.

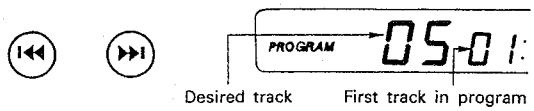
10 PROGRAMMED PLAYBACK

(1) Load a disc and press the PLAY/PAUSE button (▷II) to set the play mode.

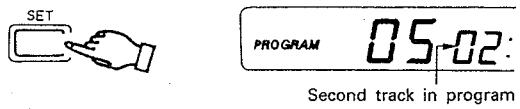
(2) Press the MODE button 5 times.

- The program, track number during play, and the play sequence (beginning with 01) will be displayed.

(3) Use the search buttons to find the desired track.

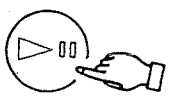


(4) Press the SET button.



(5) Repeat steps 1 and 2. (Up to 32 track can be programmed.)

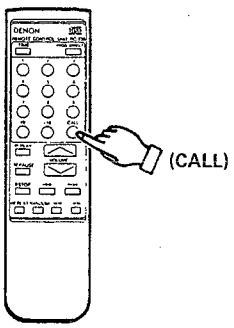
(6) Press the PLAY/PAUSE button (▷II) to start programmed playback.



- Pressing the MODE button and the SET button during the selection will delete all the programs and set the unit to the normal play mode.
- When 32 tracks have been selected the play sequence display returns to 01. Continuing to make selections in this condition will delete the contents that were initially stored and program the new tracks.
- Pressing the SET button when the track number display is at 00 will return the play sequence display to 01. Continuing to make inputs in this condition will delete the contents that were initially stored and program the new tracks.

Checking the Programmed Tracks

- Press the CALL button.
  The programmed track numbers appear in order on the display window each time this button is pressed.



11 OTHER FUNCTIONS

Time Displays

Normally, the elapsed time per track is displayed.

1 minute 17 seconds into the 5th track

To check the remaining time for that track, press the SET button once.

2 minutes 31 seconds remaining

To check the remaining time for the entire disc, press the SET button once again.

16 minutes 48 seconds remaining

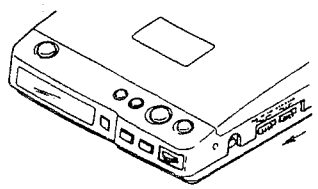
(This is not displayed during random playback.)

To return to the normal display, press the SET button again.

Accidental Operation Prevention Switch (HOLD/RESUME)

When the HOLD/RESUME switch is set to the HOLD position, buttons will not operate even when they are pressed, thus preventing the player from operating accidentally. The SET button, the OPEN button and the preset equalizer switch will function even when the HOLD/RESUME switch is set to the HOLD position.

- The remote control unit will function when the HOLD/RESUME switch is set to the HOLD position.

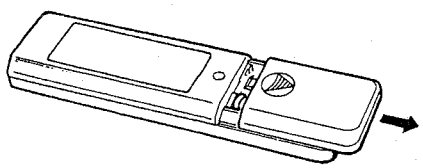


12 REMOTE CONTROL

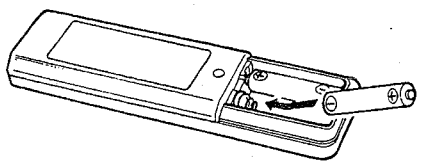
The DCP-150 can be controlled from a distance using the included remote control unit (RC-236).

(1) Inserting Batteries

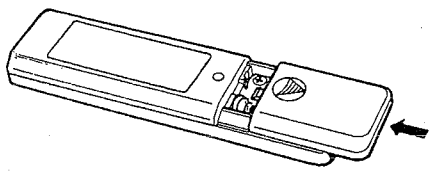
① Remove the lid on the back of the remote control unit.



② Insert two R6P/AA batteries, following the marks indicated inside.



③ Set the lid back in place.



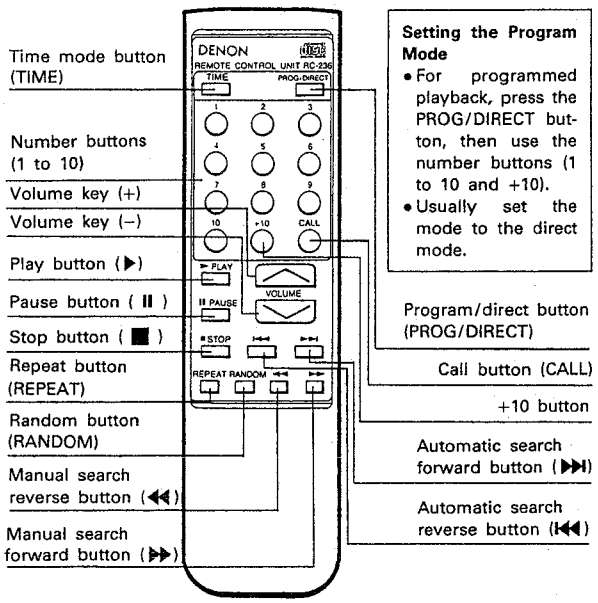
Listening from the position at which playback was last stopped .... Resume Play

When the HOLD/RESUME switch is set to the RESUME position and the PLAY/PAUSE button (▷II) is pressed in the stop mode, playback begins from the beginning of the track which was playing when the stop mode was last set.

- If the stop mode was set at the end of the disc, playback starts from the first track.
- If the stop mode was set near the very end of a track, playback may begin from the next track.
- If the lid has been opened and the disc changed, playback starts from the first track.
- In the resume play mode, there may be a slight delay from the time the PLAY/PAUSE button (▷II) is pressed until the sound starts.

Notes on Batteries (Remote control unit RC-236)

- Use R6P/AA batteries in the remote control unit.
- The batteries should be replaced about once each year, depending on how often the remote control unit is used.
- If the remote control unit stops functioning, replace the batteries, even if they have been used for less than a year.
- Set the batteries in the proper direction, following the marks on the inside of the remote control unit's battery case.
- To prevent damage or leakage from the battery:
  - Never use an old battery with a new one.
  - Never use two different types of batteries.
  - Do not short-circuit, take apart, or heat batteries, or expose them to flames.
- Remove the batteries when not using the remote control unit for long periods of time.
- If the batteries should leak, carefully wipe off the fluid from the inside of the battery case, then insert new batteries.



Setting the Program Mode

- For programmed playback, press the PROG/DIRECT button, then use the number buttons (1 to 10 and +10).
- Usually set the mode to the direct mode.

- **Direct Search**

  During normal playback, you can search for tracks directly simply by pressing the number buttons (1 to 10 and +10).

- **Programmed Playback**

  Press the PROG/DIRECT button then the number buttons (1 to 10 an +10).

  Ex.: PROG/DIRECT → 3 → +10, 1 → 5 ... (to program tracks 3, 11, 5 ...)

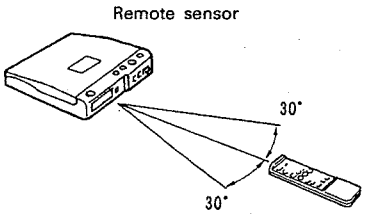
  To cancel the program, press the PROG/DIRECT button again.

- **Volume**
  The output level of the LINE OUT and headphones output jacks changes when the volume buttons are operated. Press the + button to increase the level, the — button to decrease it.
  When a volume button is operated, "–" is displayed in the minutes section of the display, and the level is displayed in the seconds section for approximately 5 seconds. 0 is the maximum, –30 the minimum. The volume changes in 30 steps of approximately 1dB per step.
  When using the player on batteries (AP-11), the output level is held for three minutes after the stop mode is set. After this, the output level will be set to the maximum when the PLAY/PAUSE button (▷II) is pressed, starting playback.
  When using the player with the AC adaptor (or separately sold car adaptor), the output level is kept at the same level after the stop mode is set.
  This volume can only be controlled by remote control, so set the volume to the desired level before moving the set to a place with no remote control. However, when using the set on batteries alone, if the PLAY/PAUSE button (▷II) is pressed over 3 minutes after the stop mode was set, the output level is automatically set to the maximum level.

Notes on Use:
- Do not press buttons on the DCP-150 and on the remote control unit simultaneously, as this may result in malfunction.
- Remote control operation may not be possible if the remote sensor is exposed to direct sunlight or strong artificial light.

- **Using the Number Buttons**
  To set tracks 1 to 10, simply press the corresponding number button.
  To set tracks 11 or over, use the +10 button and the number buttons.
  Ex.: To set track number 22, press the +10 button twice, then press 2.

(2) Operation
- Point the remote control unit at the remote sensor on the DCP-150, as shown in the diagram.



- The remote control unit will function from a straight distance of approximately 8 meters from the DCP-150. This distance will be shortened, however, if there are obstacles in the way or when operating from an angle.

- The buttons on the remote control unit have the same functions as the corresponding buttons on the DCP-150.
- When using this player on batteries, the remote control unit will stop functioning three minutes after the stop mode is set and the power is turned off.
  To turn the power back on, press the PLAY/PAUSE button (▷II) on the main unit.

13 TROUBLESHOOTING

If you should think there is a problem with the player, first check the following:

Playback does not start.
- Is the HOLD/RESUME switch set in the HOLD direction? ..... See page 14
- Is the disc dirty or scratched? ..... See page 8
- Are the batteries charged? ..... See page 8
- Is the AC power adaptor disconnected?
- Is the cover open?
- Is the car adaptor disconnected?

No sound is produced or sound is distorted.
- Are the headphones plugged securely into the PHONES jack? ..... See page 7
- Is the volume control adjusted properly? ..... See page 7
- Is the output cord properly connected to the amplifier? ..... See page 8
- Are the controls and switches on the amplifier at the proper positions? ..... See page 8

Programmed playback does not work.
- Have you followed the proper procedure? ..... See page 13

Remote control unit does not function properly.
- Are the batteries dead? ..... See page 8, 9
- Is the remote control unit too far away? ..... See page 16
- Have 3 minutes passed since the stop mode was set when using the unit on batteries? ..... See page 16

Playback does not start from track 1.
- Is the HOLD/RESUME switch set to the RESUME position? ..... See page 14

CAUTION
Note that when using this player on batteries, the output level is set to the maximum when the PLAY/PAUSE button (▷II) is pressed more than three minutes after the stop mode was set.

CAUTION
- Do not play discs with the player strapped over your shoulder or when the player is otherwise subject to vibrations.
- Remove batteries when not using them for long periods of time. Also note that batteries cannot be recharged once they are totally dead.

REMOVAL OF EACH SECTION

According to the flow chart to remove screws to disassemble each part.

BOTTOM PAN COVER

Remove 4 screws ① .

CHASSIS

Remove 4 screws ②.

TOP COVER

Remove 2 shafts ③.

MAIN P.W.B.

Remove 4 screws ④.
Connector A, B.

AUDIO P.W.B.

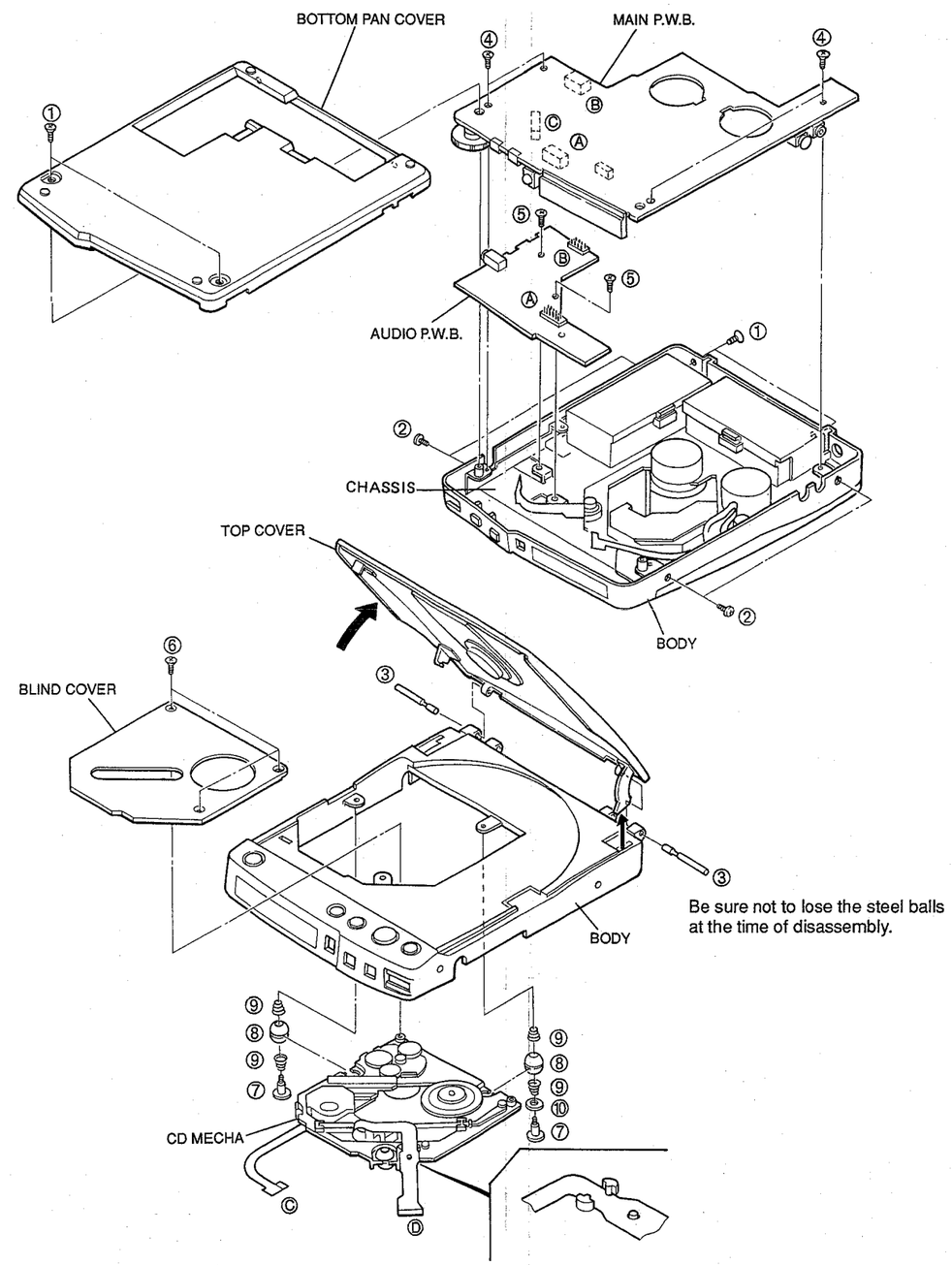
Remove 2 screws ⑤.

BLIND COVER

Remove 3 screws ⑥.

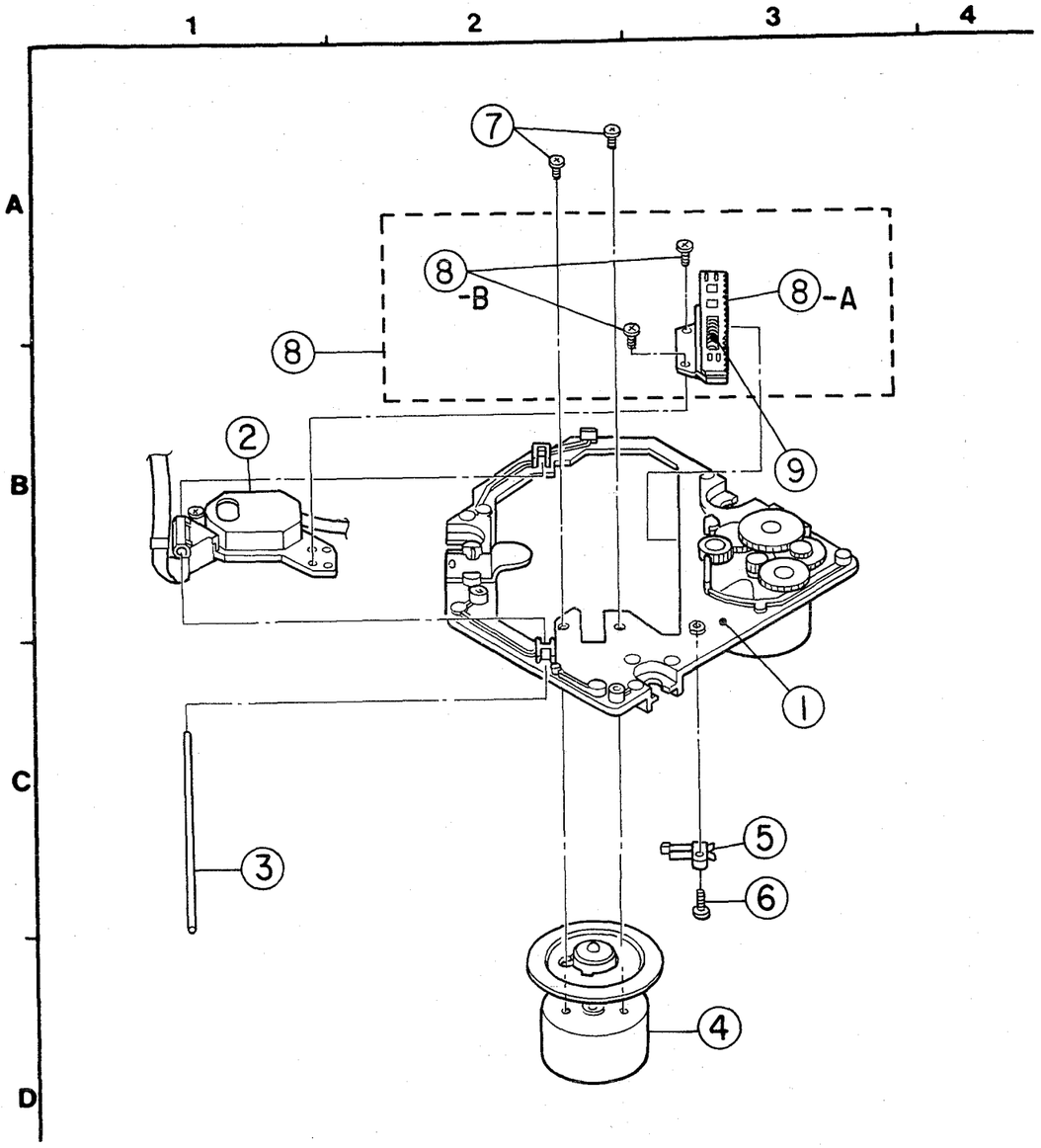
CD MECHA

Remove 3 screws ⑦,
Damper ⑧ ,
SUS Spring ⑨,
1 Washer ⑩.



Be sure not to lose the steel balls at the time of disassembly.

CD MECHANISM (KSM-220AAN)



CD MECH. PARTS LIST

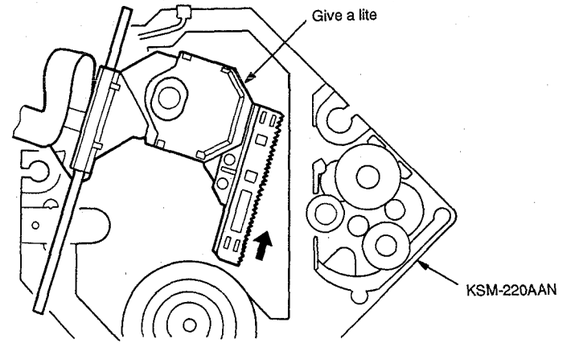
Ref. No.	Address	Part No.	Part Name & Descriptions	Q'ty
1	C-3	SX2 6415 372	Motor Ass'y A (RP)	1
2	B-1	—	Pick Up KSS-220A (S) (RP)	1
3	C-1	S26 4153 401	Shaft	1
4	D-3	SX2 6415 211	TT Motor Ass'y	1
5	C-3	S15 7011 211	Leaf Switch	1

Ref. No.	Address	Part No.	Part Name & Descriptions	Q'ty
6	C-3	S76 8510 319	Tapping Screw Non Groove 2×5 Type 2	1
7	A-2	S76 2755 288	Precision Screw Type 1 1.7×2.2	1
8	B-1	SX2 6415 281	Rack Ass'y	1
9	B-3	S26 4152 401	Coil Spring	1

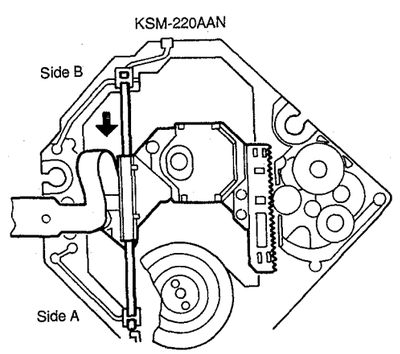
ASSEMBLING PROCEDURE IN REGARD TO KSM-220AAN (For Servicing Purpose)

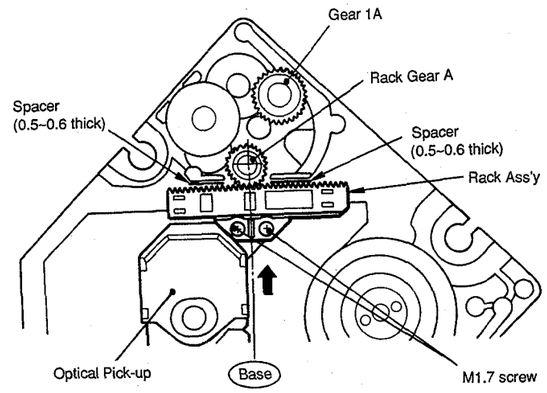
PROCEDURE

(1) In the first place, temporarily attach ⑧-A (Rack Ass'y) to ② with ⑧ -B (M1.7 screw). (hereafter called Rack Ass'y.)
(2) Attach the Rack Ass'y to ① (Motor Ass'y). At this time be careful not to bend the plate spring of Rack Ass'y. It will be easier for assembling to insert them towards the arrow direction as per the below Figure.



(3) Apply two drops of grease (SANCOL FG-84M) to the tip of ⇑ (Slide Shaft) and insert the shaft from the arrow direction as in the below Figure, then insert it to the A side of Mechanism Chassis, and insert it to the B side lastly.



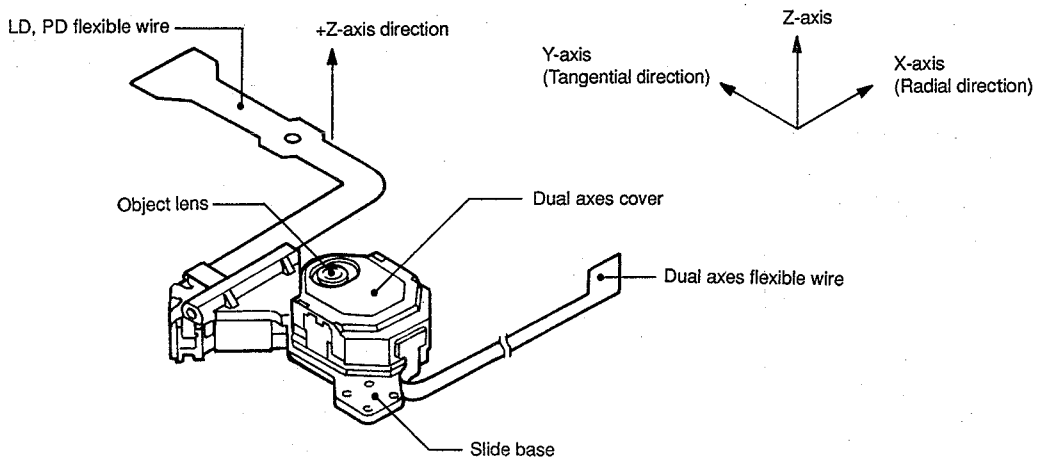


(4) Move the Optical Pick-up to Base position and while lightly pushing it in the direction of ⇑, tighten the M1.7 screws. (Tightening torque = 1.7 kg.cm.)
(5) Move the Optical Pick-up to the innermost circle by rotating the Gear 1A and ascertain that the Rack Ass'y and Rack Gear A are properly engaged but not too shallow. Also, make sure of engagement of Gears at the outermost circle of disc. If the engagement differs greatly between the innermost and outermost circle positions, repeat (4).

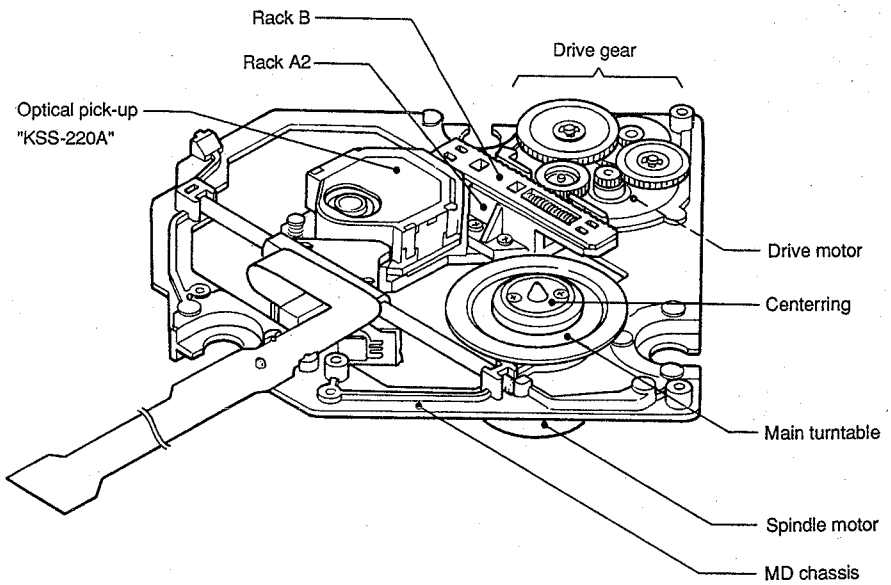
Note: Attaching a 0.5~0.6 thickness spacer to the 2 places as per the above Figure makes adjusting of engagement easier.

LASER PICK-UP (KSM-220AAN)

Fig. 1 DESCRIPTION OF THE COMPONENTS



a) Optical Pick-up

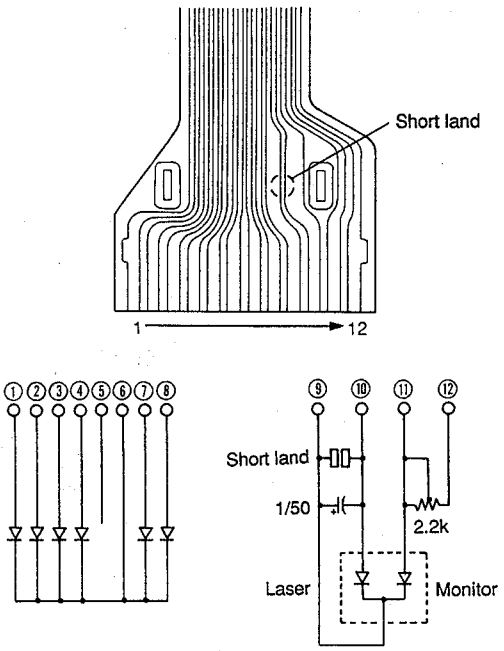


b) Drive Unit

Fig. 2 TERMINAL CONNECTION DIAGRAM

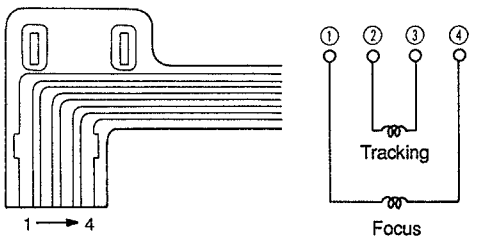
1. LD, PD Terminal

Terminal No.	Description
1	PD B
2	PD A
3	PD C
4	PD D
5	Reference (GND)
6	PD K
7	PD E
8	PD F
9	LD GND
10	LD LASER
11	LD MONITOR
12	LD Reference level



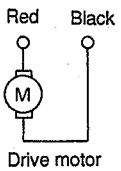
2. Dual Axes Terminal

Terminal No.	Description
1	FOCUS –
2	TRACKING +
3	TRACKING –
4	FOCUS +



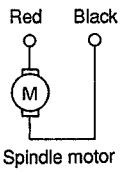
3. Drive Motor Harness

Color	Description
Red	SLED +
Black	SLED –



4. Spindle Motor Harness

Color	Description
Red	SPINDLE +
Black	SPINDLE –

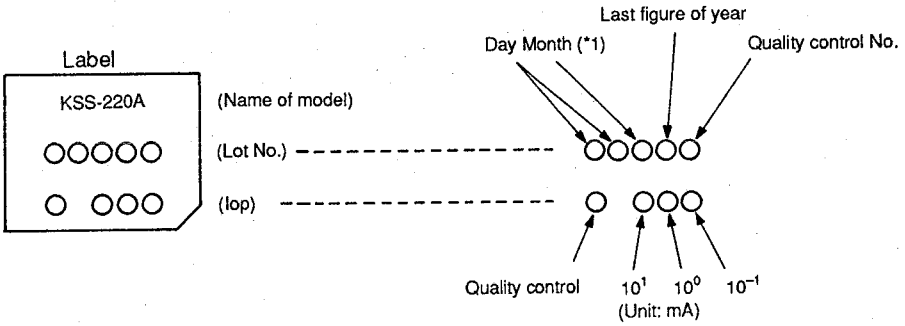


Recommendable connectors

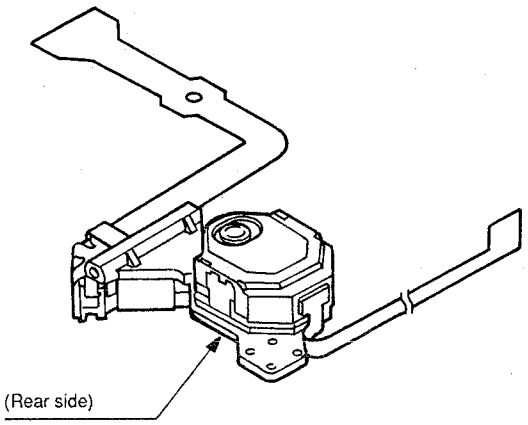
- Nihon BURNDY Co.'s SLP series connector.
- Nihon MOLEX Co.'s 5597-NAPB series connector

INDICATION

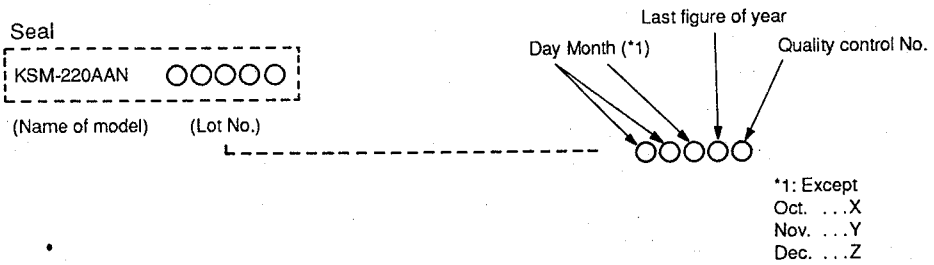
Optical Pick-up



Position of the labels

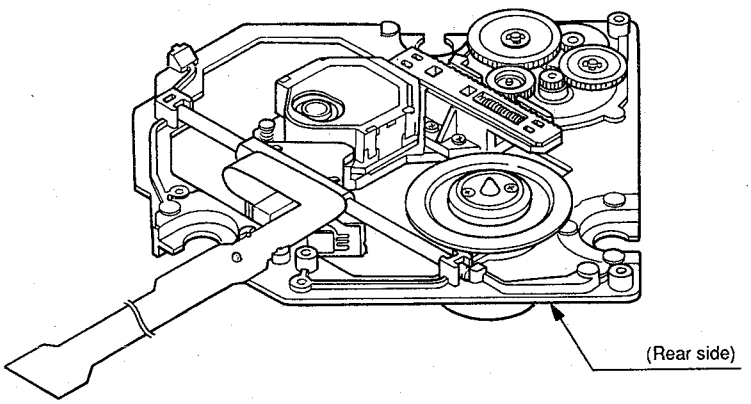


Drive Unit



*1: Except
Oct. . . .X
Nov. . . .Y
Dec. . . .Z

Position of seal



Caution for Handling the Laser Pick-up

The laser pick-up KSM-220AAN is assembled and precisely adjusted using a sophisticated manufacturing process in our plant. Do not disassemble or attempt to readjust it. Please keep the following instructions carefully in handling pick-up.

1. Handle with Care

(1) Storage
Do not store the pick-up in dusty, high-temperatured or high-humidity environments.

(2) Please take care for preventing from shock by falling down or careless handling, as this unit is precisely adjusted.

2. Laser Diode (LD)

(1) Protect your eyes
The laser beam may damage the human eye, since the intensity of the focused spot may reach 7×10^3 W/cm^2 even though the intensity at the objective lens is 400 μW maximum. As the light beam spreads after focused through the objective lens, it does not effect you in the place as far as more than 30 cms. However, do not look at the laser light beam either through the objective lens directly or another lens or a mirror. In case you should look at it, use ultra-red viewer or ITV camera.

(2) Poison of As
Since the LD chip contains As (Arsenic), as GaAs + GaAlAs, as known as the poison, although the poison is relatively weak, in comparing with others, e.g.As_2O_3, $AsCl_3$ etc., and the amount is small, avoid putting the chip in acid or alkali solution, heating it over 200°C or putting it into your mouth. Put inferior parts from defected lines and of service parts into a trash box, and throw them away according to the method instructed by our company.

(3) Avoid surge current or electrostatic discharge
The LD may be damaged or deteriorated by its own strong light if a large current is supplied to it, even if only a short pulse. Make sure that there is no surge current in the LD driving circuit by switches or else. Be careful to handle pick-up as it may be damaged in a moment by human electrostatic discharge. The pins of the LD are short-circuited by solder for protection during shipment.
For safety handling of an LD, grounding the human body, measuring equipments and jig is strongly recommended at the time of mounting. And still it is further desirable to make use of mat on the platform and floor for handling the LD for purpose of grounding.
To open the short circuit, remove the soldering quickly with a soldering iron whose metal part is grounded, after the connector is inserted.
Soldering iron to use should be grounded by metallic portion or those with insulation resistance of over 10 MΩ (DC500 V) after 5 minute period of power supply.
The temperature of the soldering iron should be less than 320°C (30W), and removing should be done quickly.

3. Actuator

(1) The performance of the actuator may be effected if magnetic material is located nearby, since the actuator has a strong magnetic circuit. Do not permit dust to enter through the clearance of the cover.

(2) Cleaning the lens
It may change the specifications by attaching dust or ash on the objective lens. Clean the lens with a lens cleaning paper dampened with a little Isopropylalcohol, not pressing lens with excess strength by the cleaning paper.

4. Lubricant Supply

For this unit, lubricant supplying at the time of mounting and during the operation are unnecessary.
However, in case lubricant supplying is desirable due to some reasons, use lubricating grease "FG-84M" (made by Wada Kosan) and be sure to avoid using any grease of the other kinds.

5. Laser is Deteriorated

In case the laser current of more than 100 mA is supplied (i.e, when the voltage across R203 is over 1V) at the time of laser illumination, replace the pick-up as the laser is deteriorated.

METHOD OF ADJUSTMENT

Microcomputer built in the unit comprises service program to facilitate various servo adjustments by pushing operation button.

1. Start Service Program

(1) Turn the power OFF. (Pull out the AC power adaptor.)

(2) Push OPEN button and load disk. (TEST CD: 33CA1094)

(3) Solder and bridge the Service Land on the P.W.Board. (Refer to the Figure on page 4.)

(4) Turn the power ON. (Put in the AC power adaptor and Push the PLAY/PAUSE button.)
(Service program will start and the track indicator displays 01.)

(5) Un solder and bridge the Service Land on the P.W.Board.

CAUTION:

- When service program has started, normal operation of buttons will be defeated.

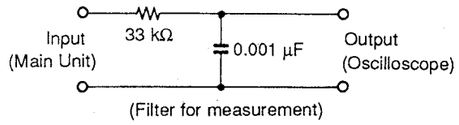
2. Service Program Function

Button	Function	Description
■	Stops system function.	● Display track No. 01. ● For readjustment, push the button again.
►II	Starts focus servo and the disc rotates.	● Push when adjust tracking offset. ● Displays track No. 2 when completed.
MODE	Starts focus servo, tracking servo, slide servo, spindle servo.	● Displays track No. 3 when completed.
Other Buttons	No normal operation.	● Do not operate buttons other than the above. ● If misoperated, immediately push the ■ STOP button.

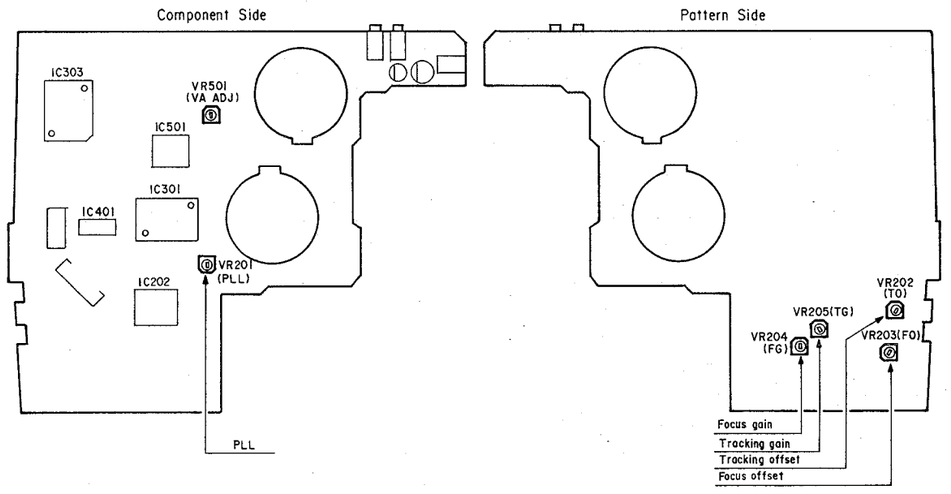
3. Adjustment

(1) Required measuring equipments for adjustment

① Dual mode oscilloscope
② Adjustment disc
③ Oscillator (10Hz~10kHz, 0~3Vp-p)
④ Frequency counter (readable more than 5MHz)
⑤ Filter for measurement
⑥ Voltage meter



(2) Adjustment point



(3) Preparation

1. Start service program.
2. Set the adjustment control to the position as per below Figure.

VR201 (PLL)
VR202 (T.O)
VR203 (F.O)
VR204 (F.G)
VR205 (T.G)
VR501 (VA ADJ)

3. Adjustment order

a) VA
b) PLL
c) Tracking offset (T.O)
d) Focus gain (F.G)
e) Focus offset (F.O)
f) Tracking gain (T.G)
g) Tracking offset (T.O) recheck

4. Stop service program

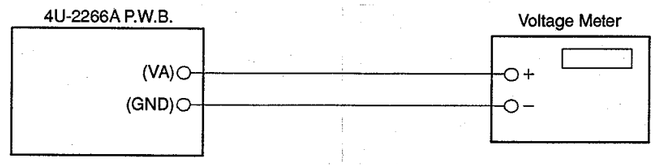
Unplug AC power adaptor or open the top cover.

CAUTION:

● Service program will stop when the top cover is opened during execute adjustment.
If it happens, start service program again.

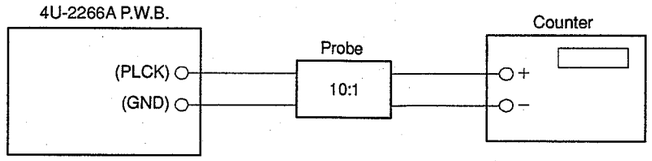
5. VA Adjust

(If you change IC501, 504 or TR411 you must adjust VA.)

Connection		
		
Adjust	Check	Step
(Volume)	(Voltage meter)	
VR501	4.8 V ± 0.05V	• Turn VA ADJUST volume VR501 so that voltage meter reads 4.8 V.

6. PLL Adjust

Connection

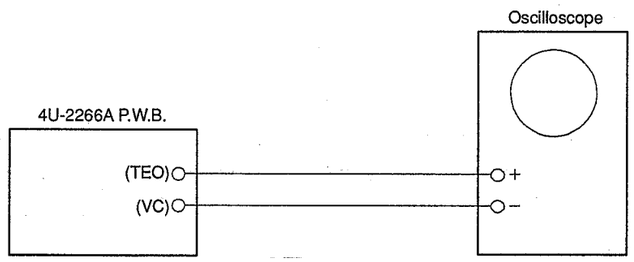


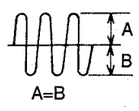
- Ground Test point [ASY] to GND.

Adjust	Check	Step
(Volume)	(Counter)	
VR201	4.25 MHz ± 10 kHz	• Turn PLL volume VR201 so that frequency counter reads 4.25 MHz.

7. Tracking offset

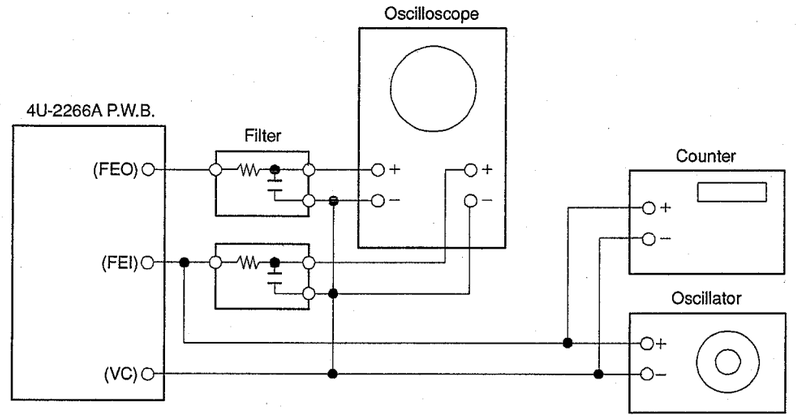
Connection

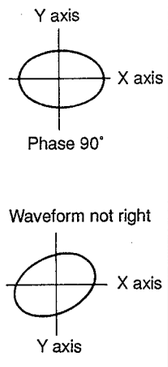


Oscilloscope (DC range)		Adjust	Check	Step
V	H	(Volume)	(Oscilloscope)	
0.1V/div	1~2 ms/div	VR202		1. Push ▶II and rotate disc. 2. Short (+) (–) of oscilloscope and check the base line. 3. Adjust VR202 [T-O] to equalizer upper and lower amplitude of the waveform.

8. Focus gain

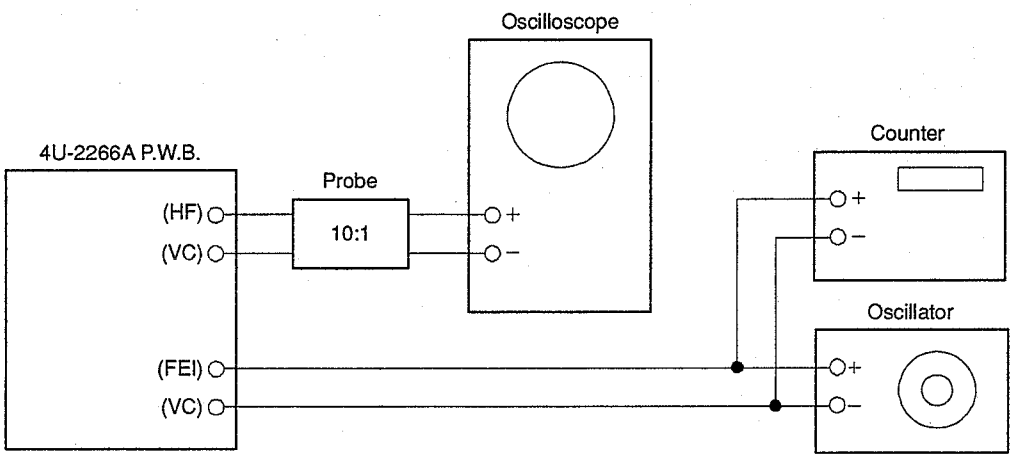
Connection

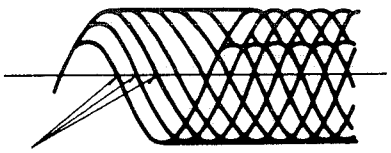
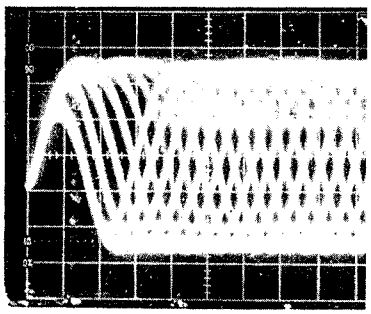


Oscillator	Counter	Oscilloscope V	Oscilloscope H	Adjust	Check	Step
1.1 kHz 0.5 Vp-p (±0.1 V)	1.1 kHz	• DC range • X-Y mode		VR204		1. Push MODE . 2. Set oscillator to 1.1 kHz/0.5 Vp-p. 3. Switch oscilloscope input to X-Y mode. 4. Adjust VR204 [F-G] to symmetrize Lissajous figures to X and Y axes.

9. Focus offset

Connection



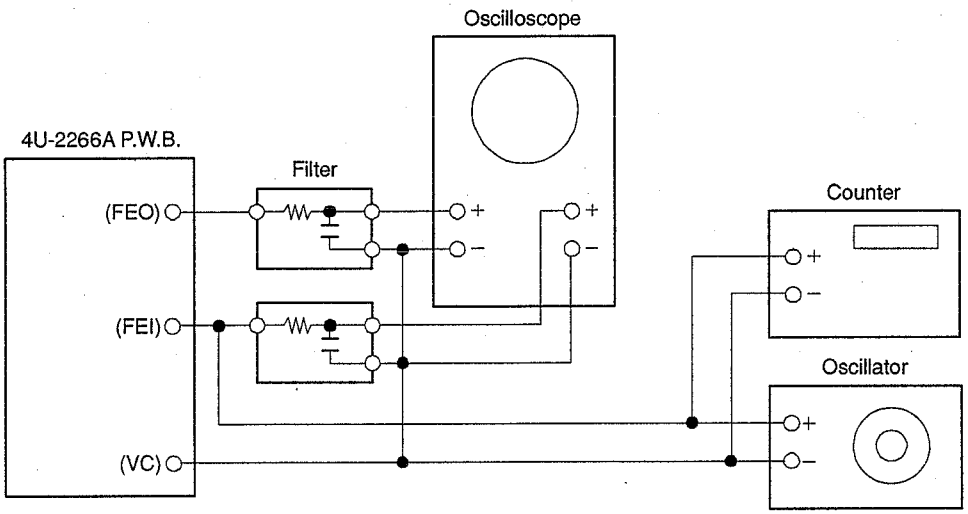
Oscillator	Counter	Oscilloscope		Adjust	Check
		V	H	(Volume)	(Oscilloscope)
1.1 kHz 0.5 Vp-p (±0.1V)	1.1 kHz	50 mV/div or 20 mV/div	0.2 µs/div or 0.5 µs/div	VR203	 Adjust to minimize pattern jitter.  Pattern
		● Set input mode to ALTERNATE or CHOPPER.			

Step

1. Push [MODE] .
2. Set oscillator to 1.1 kHz, 0.5 Vp-p (±0.1 V).
3. VR203 [F-O] to minimize pattern jitter.

10. Tracking gain

Connection



• Caution: Connect oscillator after [MODE] pushed and servo function started.

Oscillator	Counter	Oscilloscope		Adjust	Check	Step
		V	H	(Volume)	(Oscilloscope)	1. Push [MODE].
● 2.4 kHz (±120 Hz) ● 0.5 Vp-p (±0.1V)	2.4 kHz (±120 Hz)	● DC range ● X-Y mode		VR205	Y axis / X axis / Phase 90°	2. Connect oscillator. 3. Set oscillator to 2.4 kHz/0.5 Vp-p. 4. Switch oscilloscope input to X-Y mode. 5. Adjust VR205 [T-G] to symmetrize Lissajous figures to X-Y axes.

11. Tracking offset adjustment check

(1) Push [■] and stop disc.

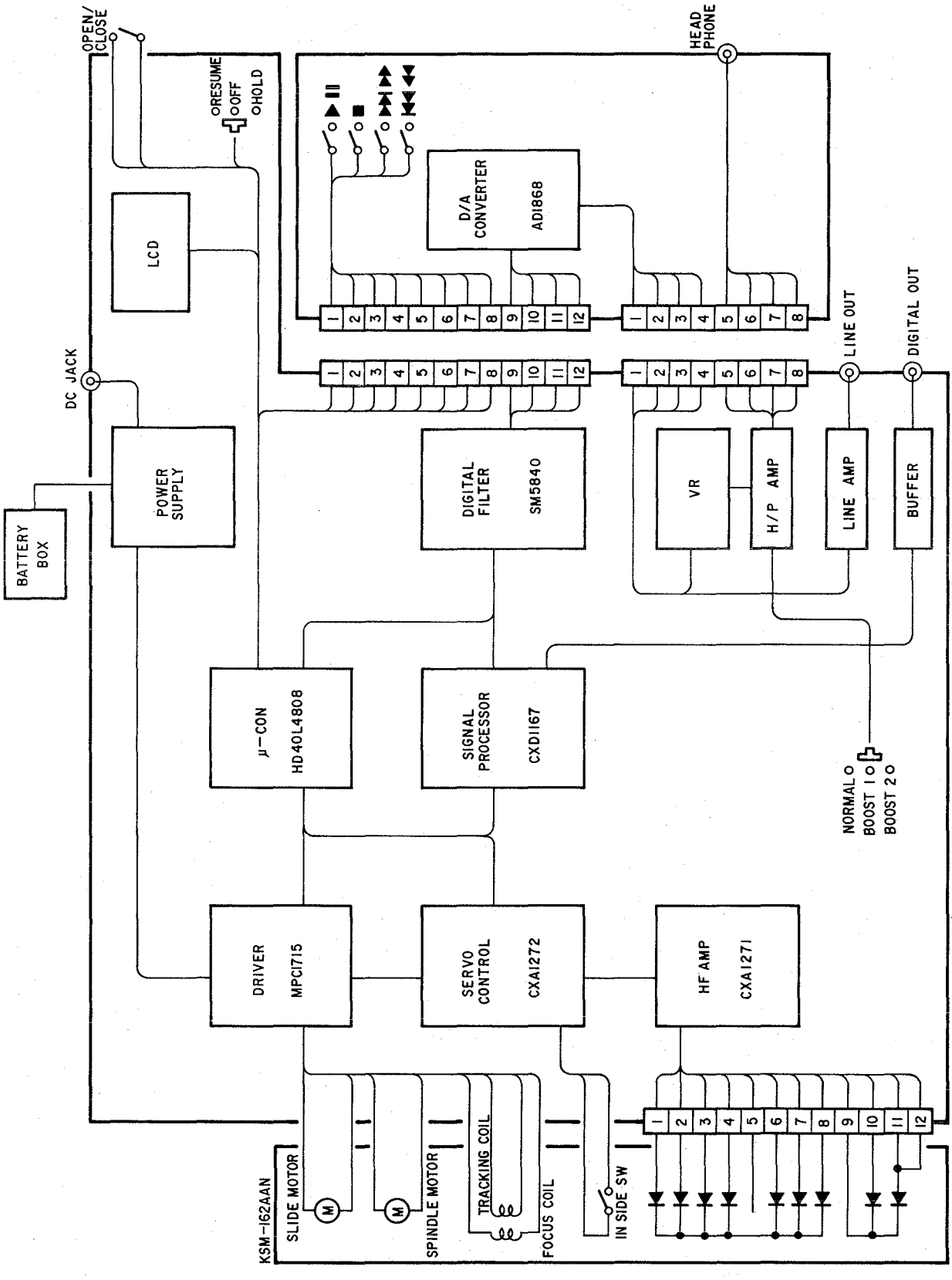
(2) Push [▶II] and check disc turns.

Note: If disc does not turn, push [▶II] again and check track number 02 is displayed.

(3) Check oscilloscope waveform upper and lower amplitude are same to base line.

(4) Push [■] and stop disc.

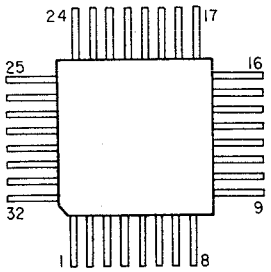
BLOCK DIAGRAM

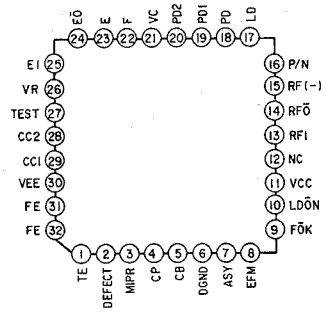


SEMICONDUCTORS

- **IC's**

IC201 CXA1271Q

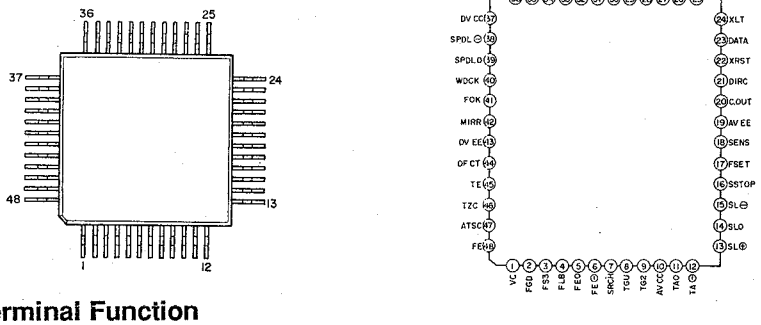




CXA1271Q Terminal Function

Terminal No.	Terminal Symbol	I/O	DC voltage (V) PLAY	Terminal Function
1	TE	O	V_{TEEO}	Output terminal of tracking error amplifier.
2	DEFECT	O	V_{DFCTL}	Output terminal of defect comparator. (DC voltage: Connect a 10 kΩ load resistance.)
3	MIRR	O	V_{MIRL}	Output terminal of MIRR comparator. (DC voltage: Connect a 10 kΩ load resistance.)
4	CP	I	1.2	Connecting terminal for MIRR hold capacitor. Non-reverse input terminal of MIRR comparator.
5	CB	I	1.5	Connecting terminal for defect bottom hold capacitor.
6	D GND	—	0	At ± dual-power supply: GND. At mono-power supply: GND (V_{EE}).
7	ASY	I	—	Input terminal of auto-asymmetry control.
8	EFM	O	V_{EFMH}	Output terminal of EFM comparator. (DC voltage: Connect a 10 kΩ load resistance.)
9	FOK	O	V_{FOKL}	Output terminal of focus OK comparator. (DC voltage: Connect a 10 kΩ load resistance.)
10	$\overline{\text{LD ON}}$	I	0 (D GND)	ON/OFF shifting terminal for laser diode (LD). (DC voltage: At LD ON.)
11	V_{CC}	—	3.5	Positive power supply terminal.
12	NC	—		Do not connect.
13	RFI	I	1.7	Input terminal of capacitance coupled RF summing amplifier output.
14	RFO	O	V_{RFO}	Terminal for RF summing amplifier output. Check point of Eye pattern.
15	RF(–)	I	1.7	Feedback input terminal of RF summing amplifier.
16	P/N	I		P-sub/N-sub shifting terminal for Laser Diode (LD). (DC voltage: at N-sub.)
17	LD	O	3.0	Output terminal of APC (Automatic Power Control) LD amplifier. (DC voltage: at N-sub, PD opened.)
18	PD	I	0	Input terminal of APC (Automatic Power Control) PD amplifier. (DC voltage: opened.)
19	PD1	I	1.7	Reverse input terminal of RF I-V amplifier (1). Receives an input current through A + C terminals of photo diode.
20	PD2	I	1.7	Reverse input terminal of RF I-V amplifier (2). Receives an input current through B + D terminals of photo diode.
21	VC	—	1.7	At ± dual-power supply: Becomes GND. At mono-power supply: Becomes VR. (connect to terminal 14.)
22	F	I	1.7	Reverse input terminal of F I-V amplifier. Receives an input current through F terminal of photo diode.
23	E	I	1.7	Reverse input terminal of E I-V amplifier. Receives an input current through E terminal of photo diode.
24	EO	O	1.0	Output terminal of E I-V amplifier.
25	EI	I	1.0	Feedback input terminal of E I-V amplifier. For gain controlling of E I-V amplifier.
26	VR	O	V_{CVO}	Output terminal of DC voltages (V_{CC} + V_{EE})/2.
27	TEST	—		Be opened.
28	CC2	I	0.5	Input terminal of capacitance coupled detect bottom hold output.
29	CC1	O	0.8	Output terminal of defect bottom hold.
30	V_{EE}	—	0	At ± dual-power supply: Becomes negative power supply terminal. At mono-power supply: Becomes GND.
31	FE BIAS	I	1.5	Bias terminal for non-reverse side of focus error amplifier. For CMR controlling of focus error amplifier.
32	FE	O	V_{FEO}	Output terminal of focus error amplifier.

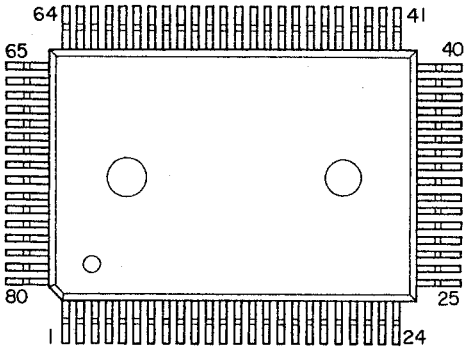
IC202 CXA1272Q

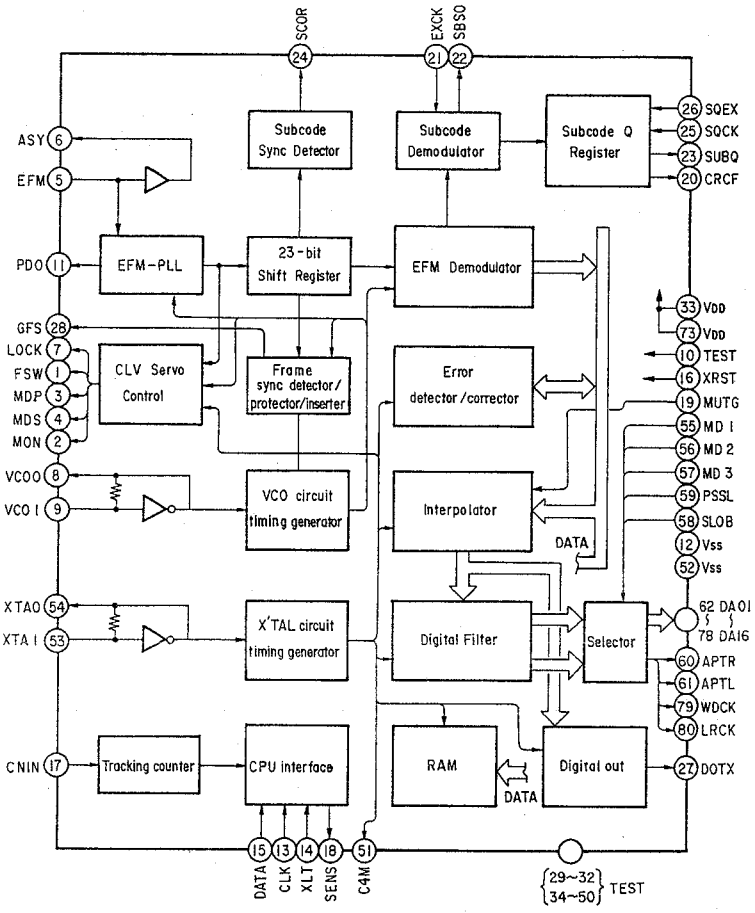


CXA1272Q Terminal Function

Terminal No.	Terminal Symbol	Terminal Function	DC Voltage (V) PLAY
2	FGD	In case of reducing higher range gain of focus servo, connect a capacitor between this terminal and terminal number 3.	
3	FS3	Shifts higher range gain of focus servo by FS3 ON/OFF.	
4	FLB	Terminal for external time constant to increase lower range of focus servo.	
5	FEO	Focus drive output.	
6	FE(–)	Reverse input terminal for focus amplifier.	
7	SRCH	Terminal for external time constant to make focus search waveform.	2.0
8	TGU	Terminal for external time constant to shift higher range gain of tracking.	
9	TG2	Terminal for external time constant to shift higher range gain of tracking.	
11	TAO	Tracking drive output.	
12	TA(–)	Reverse input terminal for tracking amplifier.	
13	SL(+)	Non-reverse input terminal of sled amplifier.	
14	SLO	Sled drive output.	
15	SL(–)	Reverse input terminal of sled amplifier.	
16	SSTOP	Terminal for limit switch ON/OFF to detect disc innermost circle.	3.5
17	FSET	Terminal to compensate peak in focus tracking phase, and for setting fo in CLV LPF.	0.7
18	SENS	Terminal to output FZC, AS, TZC, SSTOP, $\overline{\text{BUSY}}$ by command from CPU.	
20	C. OUT	Terminal to output signal for track number count.	0.1
21	DIRC	Terminal is used at the time of 1 track jump. A 47 kΩ pull up resistor is included.	3.5
22	XRST	Reset input terminal. Resets at "L".	3.5
23	DATA	Serial data input from CPU.	3.5
24	XLT	Latch input from CPU.	3.5
25	CLK	Serial data transfer clock input from CPU.	3.5
27	BW	Terminal for external time constant of loop filter.	1.8
28	PDI	Input terminal of PDO for CXD1246Q phase comparator.	1.8
29	ISET	Delivers a current to set the height of focus search, track jump, and sled kick.	2.2
30	VCOF	Resistance value between this terminal and terminal 31 is nearly proportion to VCO free-run frequency.	
32	C864	Output terminal of 8.64 MHz VCO.	
33	LOCK	Reckless drive protection circuit activates at "L". A 47 kΩ pull up resistor is included.	3.5
34	MDP	Terminal to connect MDP terminal of CXD1146Q.	
35	MON	Terminal to connect MON terminal of CXD1146Q.	3.5
36	FSW	Terminal for external LPF time constant of CLV servo error signal.	
38	SPDL(–)	Reverse input terminal for spindle drive amplifier.	
39	SPDLO	Spindle drive output.	
40	WDCK	Clock input for auto-sequence. Normally applied 88.2 kHz.	
41	FOK	FOK signal input terminal.	3.5
42	MIRR	MIRR signal input terminal.	0
44	DFCT	Defect signal input terminal. Defect measure circuit activates at "H".	
45	TE	Tracking error signal input terminal.	
46	TZC	Tracking zero cross comparator input terminal.	
47	ATSC	Input terminal of ATSC detecting window comparator.	
48	FE	Focus error signal input terminal.	

IC301 CXD1167Q





CXD1167Q Terminal Function

Terminal No.	Terminal Symbol	I/O	Terminal Function
1	FSW	O	Output to time constant of output filter for spindle motor.
2	MON	O	ON/OFF control output for spindle motor.
3	MDP	O	Drive output for spindle motor. Rough control at CLV-S mode and phase control at CLV-P mode.
4	MDS	O	Drive output for spindle motor. Speed control at CLV-P mode.
5	EFM	I	Input of EFM signal from RF amplifier.
6	ASY	O	Output to control slice level of EFM signal.
7	LOCK	O	Sampling GFS signal by WFCK/16 and if it is "H", delivers "H"; if it is continuously "L" 8 times, delivers "L".
8	VCOO	O	VCO output. When EFM signal is locked, f=8.6436 MHz.
9	VCOI	I	VCO input.
10	TEST	I	(0V).
11	PDO	O	Phase comparing output for EFM signal and VCO/2.
12	Vss	—	GND (0V).
13	CLK	I	Serial data transfer clock input from CPU. Latches data by rising edge of clock.
14	XLT	I	Input of Latch from CPU. Latches 8-bit shift register data (serial data from CPU) to each register.
15	DATA	I	Input of serial data from CPU.
16	XRST	I	System reset input. Resets at "L".
17	CNIN	I	Input of tracking pulse.
18	SENS	O	Answer to address, output internal condition.
19	MUTG	I	Input of muting. When internal register A's ATTM is in "L", and MUTG is in "L" for normal condition; "H" for no sound condition.
20	CRCF	O	Output of CRC check result of sub-code Q.
21	EXCK	I	Clock input for serial output of sub-code.
22	SBSO	O	Serial output of sub-code.
23	SUBQ	O	Q output of sub-code.
24	SCOR	O	Output of sub-code sync. S0 + S1.
25	SQCK	I/O	Reading clock of sub-code Q.
26	SQEX	I	Selection input of SQCK.
27	DOTX	O	Digital output. (When DO is OFF, output $\overline{\text{WFCK}}$.)
28	GFS	O	Output of indication for frame sync lock condition.
29	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
30	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
31	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
32	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
33	VDD	—	Power supply (+5V).
34	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
35	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
36	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
37	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
38	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
39	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
40	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
41	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
42	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
43	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
44	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
45	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
46	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
47	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
48	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
49	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
50	TEST	I	Fix at "H" or "L"; do not set at "OPEN".
51	C4M	O	Dividing output of X'tal. f = 4.2336 MHz.
52	Vss	—	GND (0V).
53	XTAI	I	X'tal oscillation circuit input. By selecting of mode, f = 8.4672 MHz or 16.9344 MHz.
54	XTAO	O	X'tal oscillation circuit output. By selecting of mode, f = 8.4672 MHz or 16.9344 MHz.
55	MD1	I	Mode selection input 1.
56	MD2	I	Mode selection input 2.
57	MD3	I	Mode selection input 3.
58	SLOB	I	Code switching input for audio data output. At "L" for 2's compliement output; at "H" for offset binary output.
59	PSSL	I	Mode switching input for audio data output. At "L" for serial output; at "H" for parallel output.
60	APTR	O	Control output for aperture compensation. In "H" for R-ch.
61	APTL	O	Control output for aperture compensation. In "H" for L-ch.
62	DA01	O	At PSSL = "H" for DA01 (LSB of parallel voice data) output. At PSSL = "L" for C1F1 output.
63	DA02	O	At PSSL = "H" for DA02 output; PSSL = "L" for C1F2 output.
64	DA03	O	At PSSL = "H" for DA03 output; PSSL = "L" for C2F1 output.
65	DA04	O	At PSSL = "H" for DA04 output; PSSL = "L" for C2F2 output.
66	DA05	O	At PSSL = "H" for DA05 output; PSSL = "L" for C2FL output.
67	DA06	O	At PSSL = "H" for DA06 output; PSSL = "L" for C2PO output.
68	DA07	O	At PSSL = "H" for DA07 output; PSSL = "L" for RFCK output.
69	DA08	O	At PSSL = "H" for DA08 output; PSSL = "L" for WFCK output.
70	DA09	O	At PSSL = "H" for DA09 output; PSSL = "L" for PLCK output.
71	DA10	O	At PSSL = "H" for DA10 output; PSSL = "L" for UGFS output.
72	DA11	O	At PSSL = "H" for DA11 output; PSSL = "L" for GTOP output.
73	VDD	—	Power supply (+5V).
74	DA12	O	At PSSL = "H" for DA12 output; PSSL = "L" for RAOV output.
75	DA13	O	At PSSL = "H" for DA13 output; PSSL = "L" for C4LR output.
76	DA14	O	At PSSL = "H" for DA14 output; PSSL = "L" for BCLK output.
77	DA15	O	At PSSL = "H" for DA15 output; PSSL = "L" for $\overline{\text{BCLK}}$ output.
78	DA16	O	At PSSL = "H" for DA16 (MSB of parallel voice data) output. At PSSL = "L" for DATA output.
79	WDCK	O	Strobe signal output. At DF ON, 176.4 kHz. At DF OFF, 88.2 kHz.
80	LRCK	O	Strobe signal output. At DF ON, 88.2 kHz. At DF OFF, 44.1 kHz.

Note:

C1F1:, C1F2: Monitor output for error correction state what C1 is at decode.

C2F1:, C2F2: Monitor output for error correction state what C2 is at decode.

C2FL: Correction state output. Becomes "H" when C2 system in which presently under correction is unable to correct.

C2PO: C2 pointer indication output. Synchronizes with audio data output.

RFCK: Read frame clock output. 7.35 kHz of X'tal system.

WFCK: Write frame clock output. 7.35 kHz when locked on to X'tal system.

$\overline{\text{PLCK}}$: VCO/2 output. When locked to EFM signal, f = 4.3218 MHz.

UGFS: Output of unprotected frame sync pattern.

GTOP: Indication output of frame synchro in protected condition.

RAOV: Overflow and underflow indication outputs of ±4 frame jitter absorbing RAM.

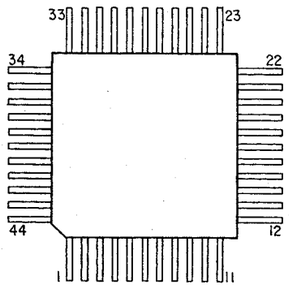
C4LR: Strobe signal. At DF ON, 352.8 kHz. At CXD1167Q or DF OFF, 176.4 kHz.

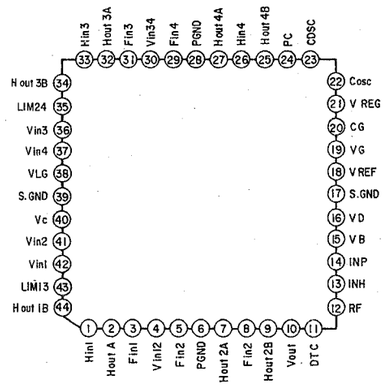
$\overline{\text{C210}}$: Reverse output of C210.

C21O: Bit clock output. At DF ON, 4.2336 MHz. At CXD1167Q or DF OFF, 2.1168 MHz.

DATA: Serial data output of audio signal.

IC501 μPC1715FU



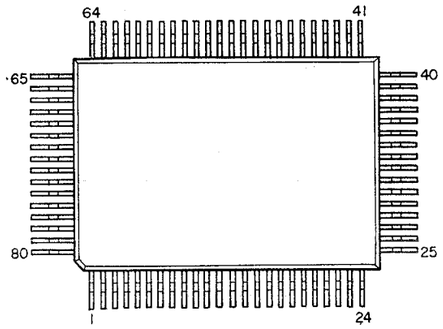


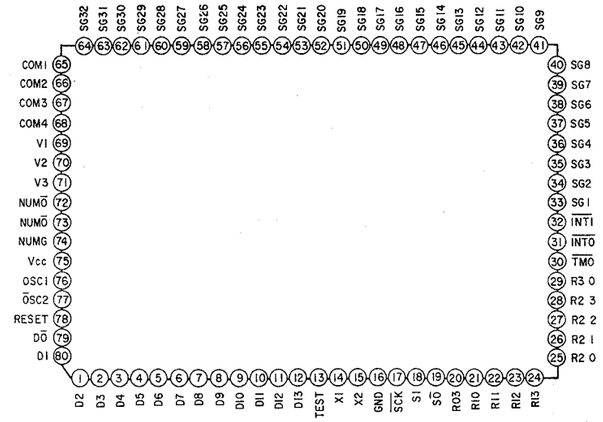
μPC1715FU Terminal Function

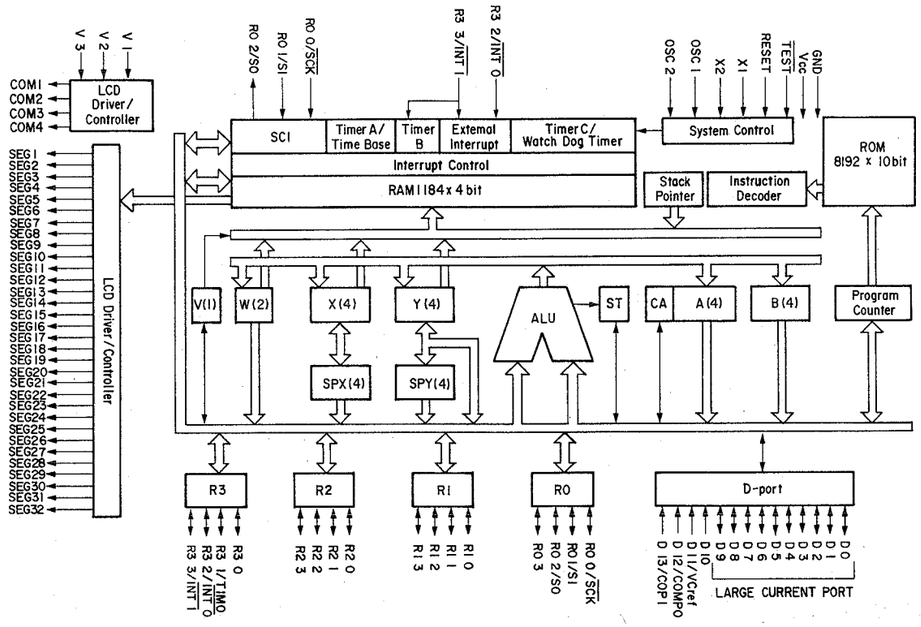
Terminal No.	Terminal Symbol	Terminal Function
1	Hin1	Power Supply connecting terminal for H bridge output of channel 1; connect output of LC filter. Resultant feedback by this connection controls loading voltage.
2	Hout1A	H bridge output terminal of channel 1; connect to the load.
3	FLin1	By connecting to LC filter, composes step down DC/DC converter to produce power supply for H bridge.
4	Vin12	Power supply input terminal for basic system power supply. (Generally, in portable system, connect to a battery.)
5	FLin2	Produces power supply for H bridge of channel 2. Same function as to terminal No. 3.
6	PWRGND 12	Power GND for channel 1 and 2.
7	Hout2A	H bridge output terminal of channel 2; connect to the load.
8	Hin2	Power supply connecting terminal for H bridge of channel 2. Same function as to terminal No. 1.
9	Hout2B	H bridge output terminal of channel 2, connect to the load.
10	Vout	External transistor connecting terminal for VLG power supply DC/DC converter.
11	DTC	Dead time control terminal. Able to set duty value (0~1005) of Vout output.
12	RF	Feedback resistor connecting terminal for error amplifier in VLG DC/DC converter circuit.
13	INM	Reverse input terminal for error amplifier in VLG DC/DC converter circuit.
14	INP	Non-reverse input terminal for error amplifier in VLG DC/DC converter circuit.
15	VB	Connecting terminal for bias stabilizing capacitor of error amplifier (operation amplifier).
16	VD	Power switch output terminal. (V00 input voltage turns ON/OFF by PC.)
17	SIGGND 24	Interval logic GND.
18	Vref	1.24V reference voltage output terminal.
19	VG	Gate drive power supply terminal for LDMOS output transistor. Utilize CG terminal to compose CHARG PUMP and delivers power.
20	CG	Connecting terminal for voltage raising capacitor of CHARG PUMP.
21	VREG	REG output terminal.
22	Cosc	Sawtooth wave output terminal.
23	SYNC	Clock input terminal.
24	$\overline{PC}$	Power control terminal. In "H" state, all circuit except VCPU output stop and becomes standby mode. (Inner part is pulled up.) Shift to "L" starts activating IC.
25	Hout4B	H bridge output terminal of channel 4.
26	Hin4	Power supply connecting terminal for H bridge of channel 4. Same function as to terminal No. 1.
27	Hout4A	H bridge output terminal of channel 4.
28	PWRGND 34	Power GND of channel 3 and 4.
29	FLin4	Produces power supply for H bridge of channel 4. Same function as to terminal No. 3.
30	Vin34	Power supply terminal. Same function as to terminal No. 4.
31	FLin3	Produces power supply for H bridge of channel 3. Same function as to terminal No. 3.
32	Hout3A	H bridge output terminal of channel 3.
33	Hin3	Power supply connecting terminal for H bridge of channel 3. Same function as to terminal No. 1.
34	Hout3B	H bridge output terminal of channel 3.
35	LIM24	Voltage value limiting input terminal for LC filter output (Hin2,4) of channel 2 and 4.
36	VMin3	Input terminal for controlling channel 3. Input terminal for motor controlling signal; this terminal voltage controls the output voltage.

Terminal No.	Terminal Symbol	Terminal Function
37	VMin4	Input terminal for controlling channel 4. Same function as to terminal No. 36.
38	VLG	Power supply input terminal of motor controlling circuit.
39	SIGGND 13	Internal logic system GND terminal.
40	Vc	Input terminal of reference potential for controlling motor.
41	VMin2	Input terminal for controlling channel 2. Same function as to terminal No. 36.
42	VMin1	Input terminal for controlling channel 1. Same function as to terminal No. 36.
43	LIM 13	Same function as to terminal No. 35. Controls output voltage of channel 1 and 3.
44	Hout1B	H bridge output terminal of channel 1.

IC303 HD40L4808AB37FS





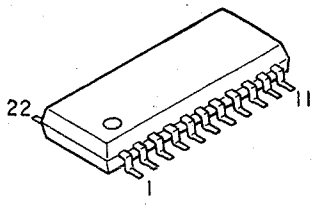


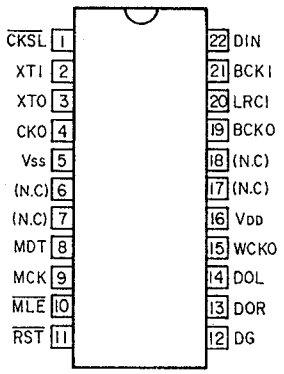
HD40L4808A41FS Terminal Function

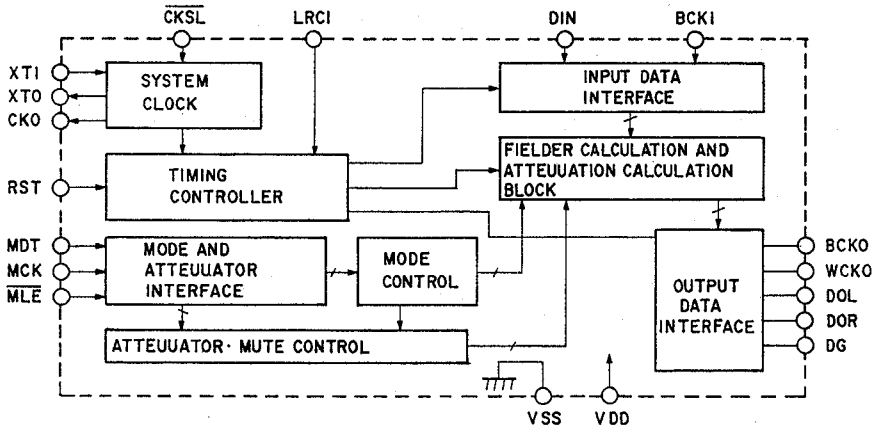
Pin No. FP-80B	Terminal Symbol	I/O	Pin No. FP-80B	Terminal Symbol	I/O
1	D_2	I/O	41	SEG9	O
2	D_3	I/O	42	SEG10	O
3	D_4	I/O	43	SEG11	O
4	D_5	I/O	44	SEG12	O
5	D_6	I/O	45	SEG13	O
6	D_7	I/O	46	SEG14	O
7	D_8	I/O	47	SEG15	O
8	D_9	I/O	48	SEG16	O
9	D_{10}	I	49	SEG17	O
10	D_{11}/VC_{ref}	I	50	SEG18	O
11	D_{12}/COMP0	I	51	SEG19	O
12	D_{13}/COMP1	I	52	SEG20	O
13	$\overline{TEST}$	I	53	SEG21	O
14	X1	I	54	SEG22	O
15	X2	O	55	SEG23	O
16	GND		56	SEG24	O
17	$RO_0/\overline{SCK}$	I/O	57	SEG25	O
18	RO_1/SI	I/O	58	SEG26	O
19	RO_2/SO	I/O	59	SEG27	O
20	RO_3	I/O	60	SEG28	O
21	$R1_0$	I/O	61	SEG29	O
22	$R1_1$	I/O	62	SEG30	O
23	$R1_2$	I/O	63	SEG31	O
24	$R1_3$	I/O	64	SEG32	O
25	$R2_0$	I/O	65	COM1	O
26	$R2_1$	I/O	66	COM2	O
27	$R2_2$	I/O	67	COM3	O
28	$R2_3$	I/O	68	COM4	O
29	$R3_0$	I/O	69	V_1	
30	$R3_1$/TIMO	I/O	70	V_2	
31	$R3_2/\overline{INT_0}$	I/O	71	V_3	
32	$R3_3/\overline{INT_1}$	I/O	72	NUMO	
33	SEG1	O	73	NUMO	
34	SEG2	O	74	NUMG	
35	SEG3	O	75	Vcc	
36	SEG4	O	76	OSC_1	I
37	SEG5	O	77	OSC_2	O
38	SEG6	O	78	RESET	I
39	SEG7	O	79	D_0	I/O
40	SEG8	O	80	D_1	I/O

NOTE: I/O: Input/Output terminal, I: Input terminal, O: Output Terminal, NUMG: GND, NUMO: OPEN

IC401 SM5840AS





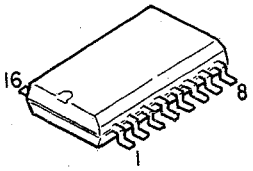


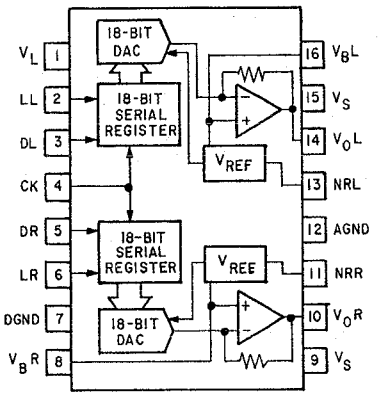
SM5840AS Terminal Function

Pin No.	Terminal Name	I/O	Function	
1	$\overline{\text{CKSL}}$	IP	Selects oscillation and input frequencies.(At $\overline{\text{CKSL}}$=H, 384fs) (At $\overline{\text{CKSL}}$=L, 256fs)	
2	XTI	O	Input terminal of oscillator section. (Selects frequency by $\overline{\text{CKSL}}$.)	
3	XTO	O	Output terminal of oscillator section.	
4	CKO		Output clock of oscillator section. (Same frequency as for XT1 terminal.)	
5	Vss	—	GND	
6	NC	—		
7	NC	—		
8	MDT	IP	Mode setting data.	Sets digital attenuator and mode flag register.
9	MCK	IP	Mode setting clock.	
10	$\overline{\text{MLE}}$	IP	Mode setting latch enable.	
11	$\overline{\text{RST}}$	IP	System reset (Initialize).	
12	DG	O	At 8fsLR parallel output mode: Deglitch output. At 4fcLR alternative output mode: Deglitch output.	
13	DOR	O	At 8fsLR parallel output mode: Rch data output. At 4fsLR alternative output mode: LR clock output.	
14	DOL	O	At 8fsLR parallel output mode: Lch data output. At 4fsLR alternative output mode: Lch/Rch data output.	
15	WCKO	O	Output of word clock.	
16	V_{DD}	—	Power supply (+5V; standard).	
17	NC	—		
18	NC	—		
19	BCKO	O	Output of bit clock.	
20	LRCI	IP	Sample rate (fs) clock for input data.	
21	BCKI	IP	Input of bit clock.	
22	DIN	IP	Input data.	

IP: Input terminal with Pull-up resistor. O : Output terminal. I : Input terminal.

IC402 AD1868R

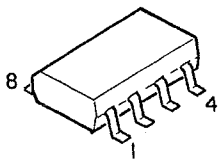


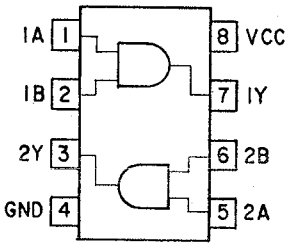


Pin Designations

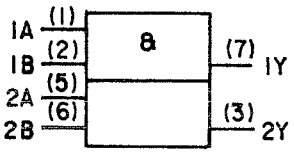
1	V_L	Digital supply (+5 volts).
2	LL	Left channel latch enable.
3	DL	Left channel data input.
4	CK	Clock input.
5	DR	Right channel data input.
6	LR	Right channel latch enable.
7	DGND	Digital common.
8	V_BR	Right channel bias.
9	V_S	Analog supply (+5 volts).
10	V_OR	Right channel output.
11	NRR	Right channel noise reduction.
12	AGND	Analog common.
13	NRL	Left channel noise reduction.
14	V_OL	Left channel output.
15	V_S	Analog supply (+5 volts).
16	V_BL	Left channel bias.

IC305 TC7W08F





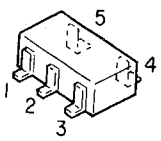
Logic Diagram

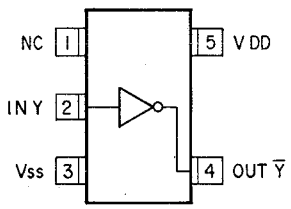


Truth Value Table

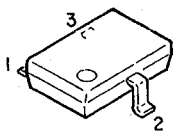
A	B	Y
L	L	L
L	H	L
H	L	L
H	H	H

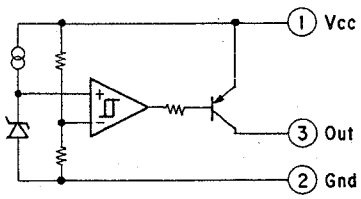
IC502, 504 TC7S04FT



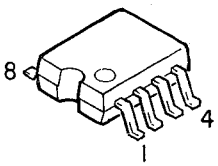


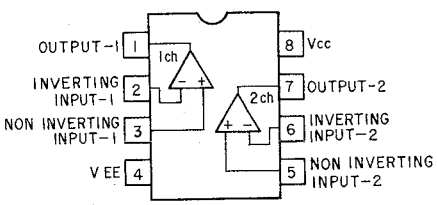
IC304 PST573L



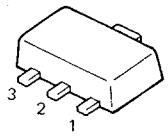


IC406 BA15218F
IC405 NJM3415M
IC203 BA10358F
IC403, 404 NJM2100M

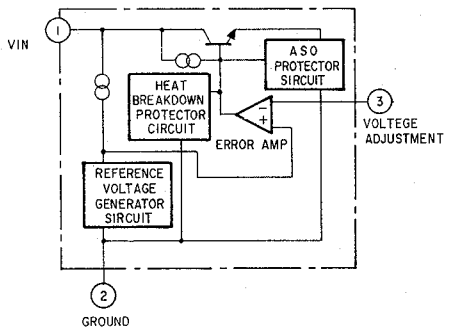




IC503 M5236M



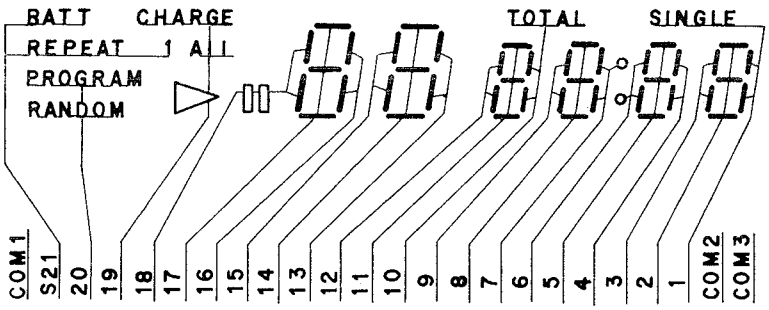
1: INPUT
2: GROUND
3: VOLTAGE ADJUSTMENT



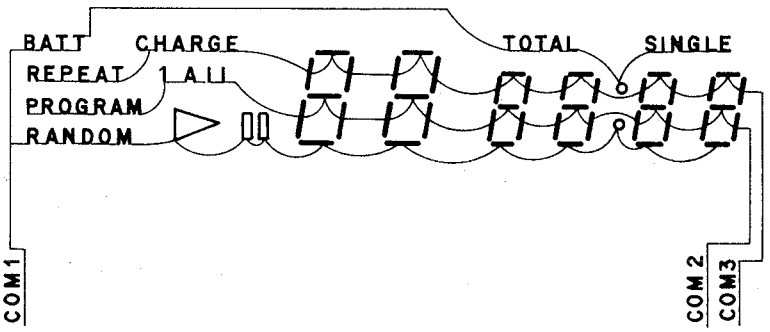
● LCD Ass'y

FRD-6E49 (Part No. 393 4089 000)

SEGMENT

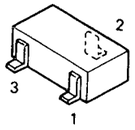


COMMON



● TRANSISTORS

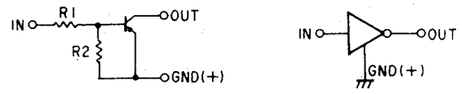
Digital Transistor (Including Resistors)



1:GND/Emitter
2:Out/Collector
3:In/Base

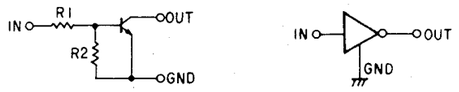
DTA144EK
DTA144TK
DTC124EK
DTC144EK
(Chip)

DTAEK Series

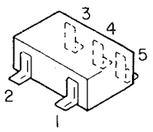


	R1	R2
DTA144EK	47kohm	47kohm
DTA144TK	47kohm	—

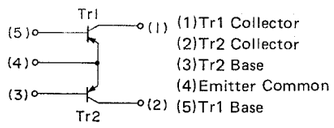
DTCEK Series



	R1	R2
DTC124EK	22kohm	22kohm
DTC144EK	47kohm	47kohm

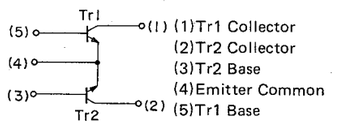


FMS1
FMW1
IMB6



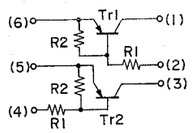
(1)Tr1 Collector
(2)Tr2 Collector
(3)Tr2 Base
(4)Emitter Common
(5)Tr1 Base

FMS1



(1)Tr1 Collector
(2)Tr2 Collector
(3)Tr2 Base
(4)Emitter Common
(5)Tr1 Base

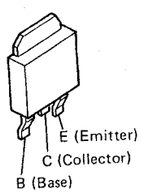
FMW1



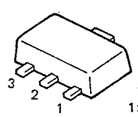
R1:47kΩ
R2:47kΩ

IMB6

2SB1182 (P/R)

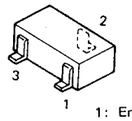


2SB1120 (E/G)



1:Emitter
2:Collector
3:Base

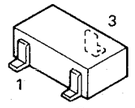
2SA1037K (S/R)
2SD1306NETL
2SC2412K (S)
2SD1048TB
(Chip)



1: Emitter
2: Collector
3: Base

● DIODES (including LED)

DA204K
(Chip)
DAP202K
(Chip)



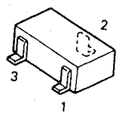
DAN202K

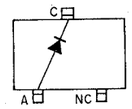
1: Anode
2: Anode
3: Cathode

DA204K

1: Anode
2: Cathode
3: Anode/Cathode

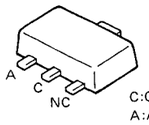
SB01-05C
SB07-03C





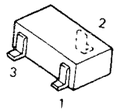
C:Cathode
A:Anode

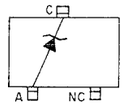
SB07-03P



C:Cathode
A:Anode

02CZ4.3 (X/Y)
02CZ5.1 (Y/Z)

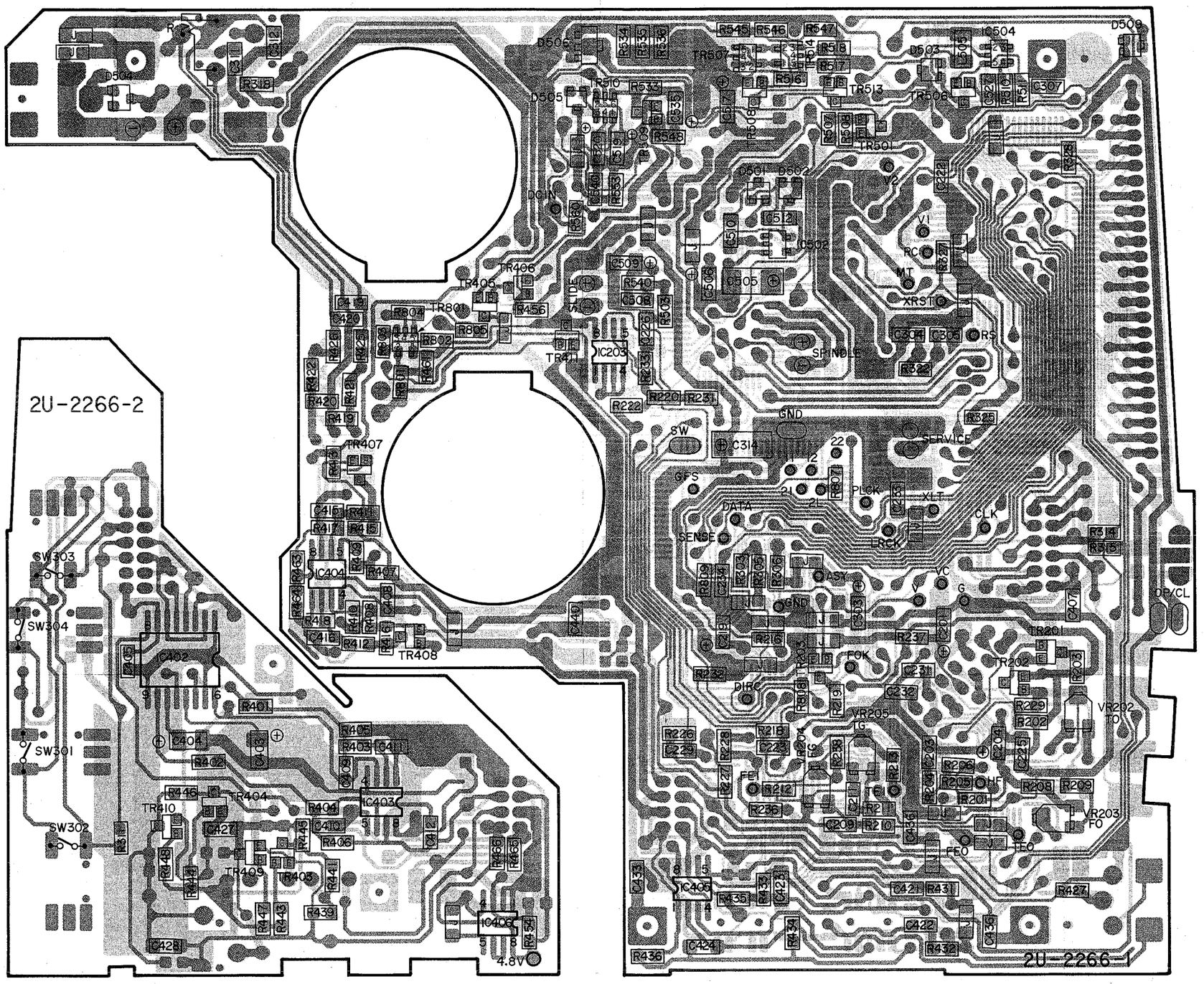




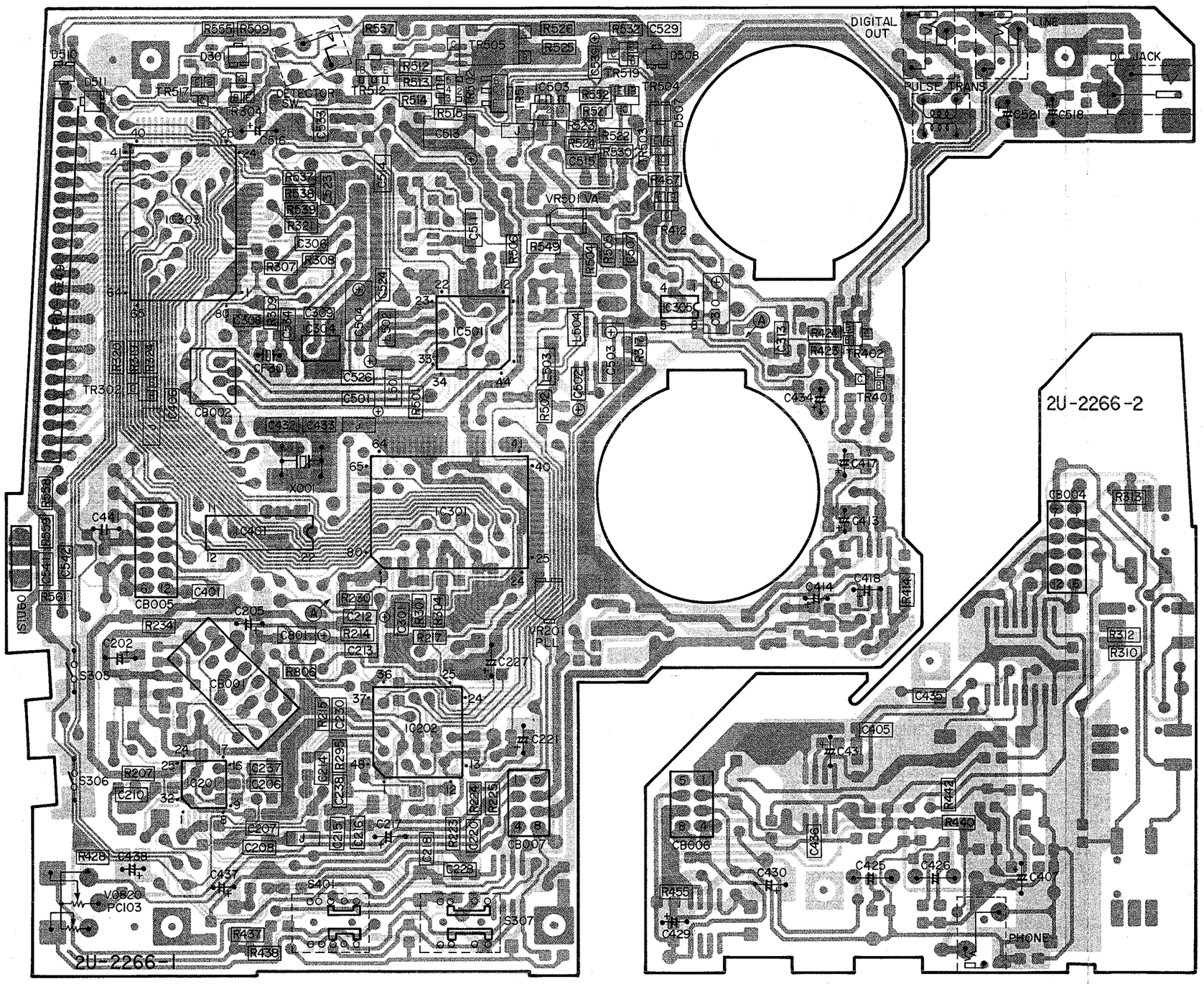
C:Cathode
A:Anode

PRINTED WIRING BOARD
4U-2266A MAIN UNIT

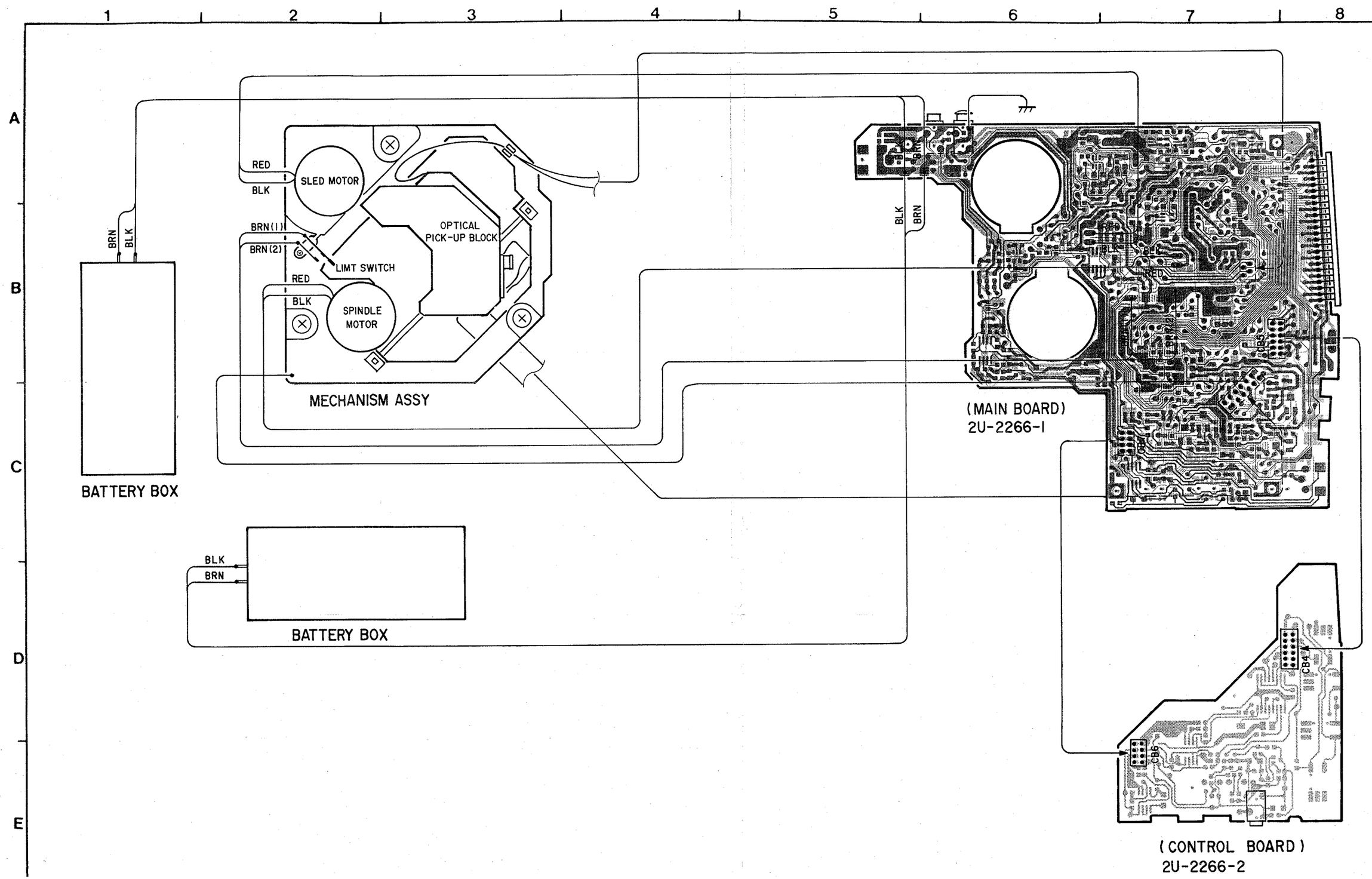
Pattern Side



Component Side



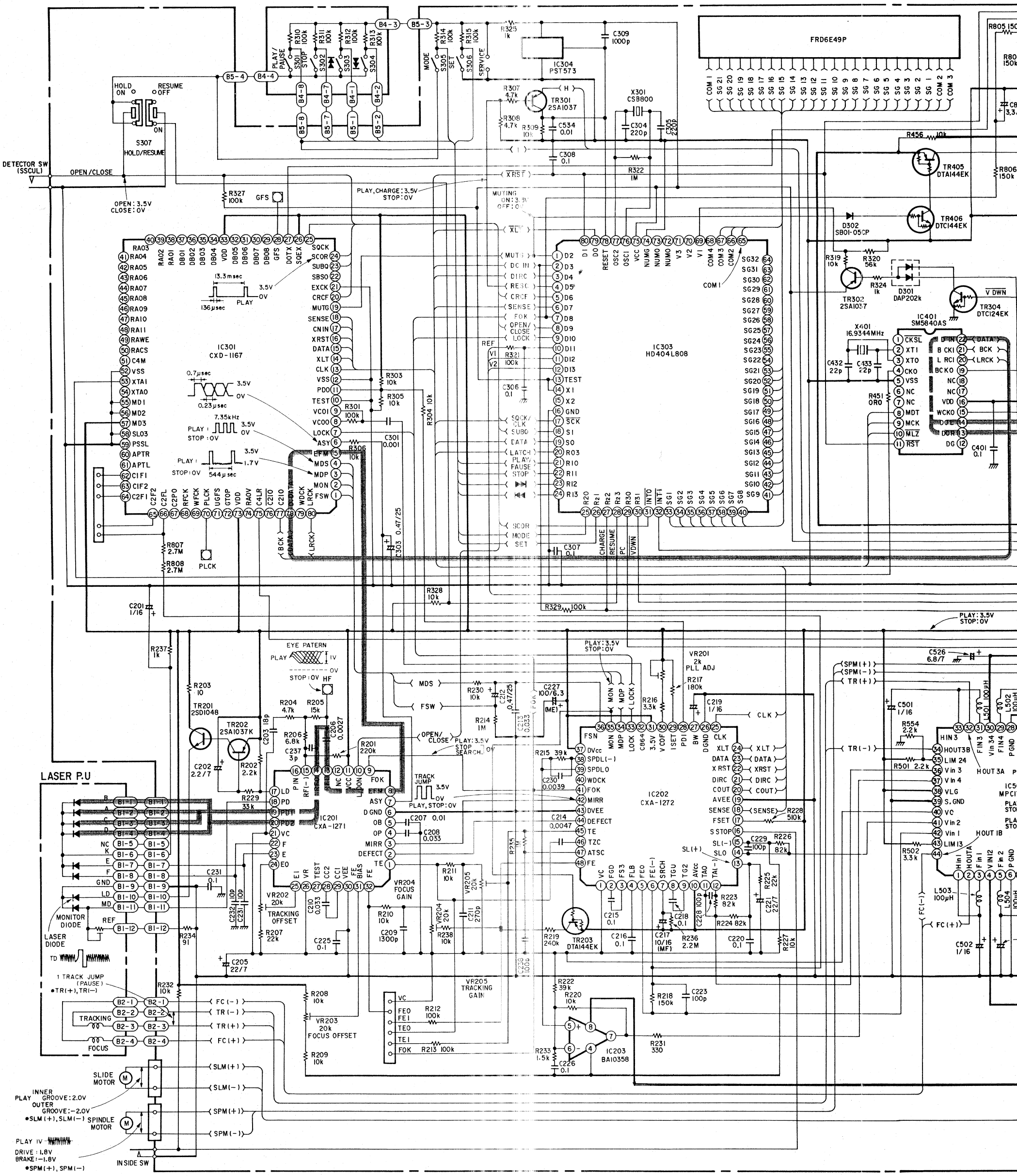
WIRING DIAGRAM

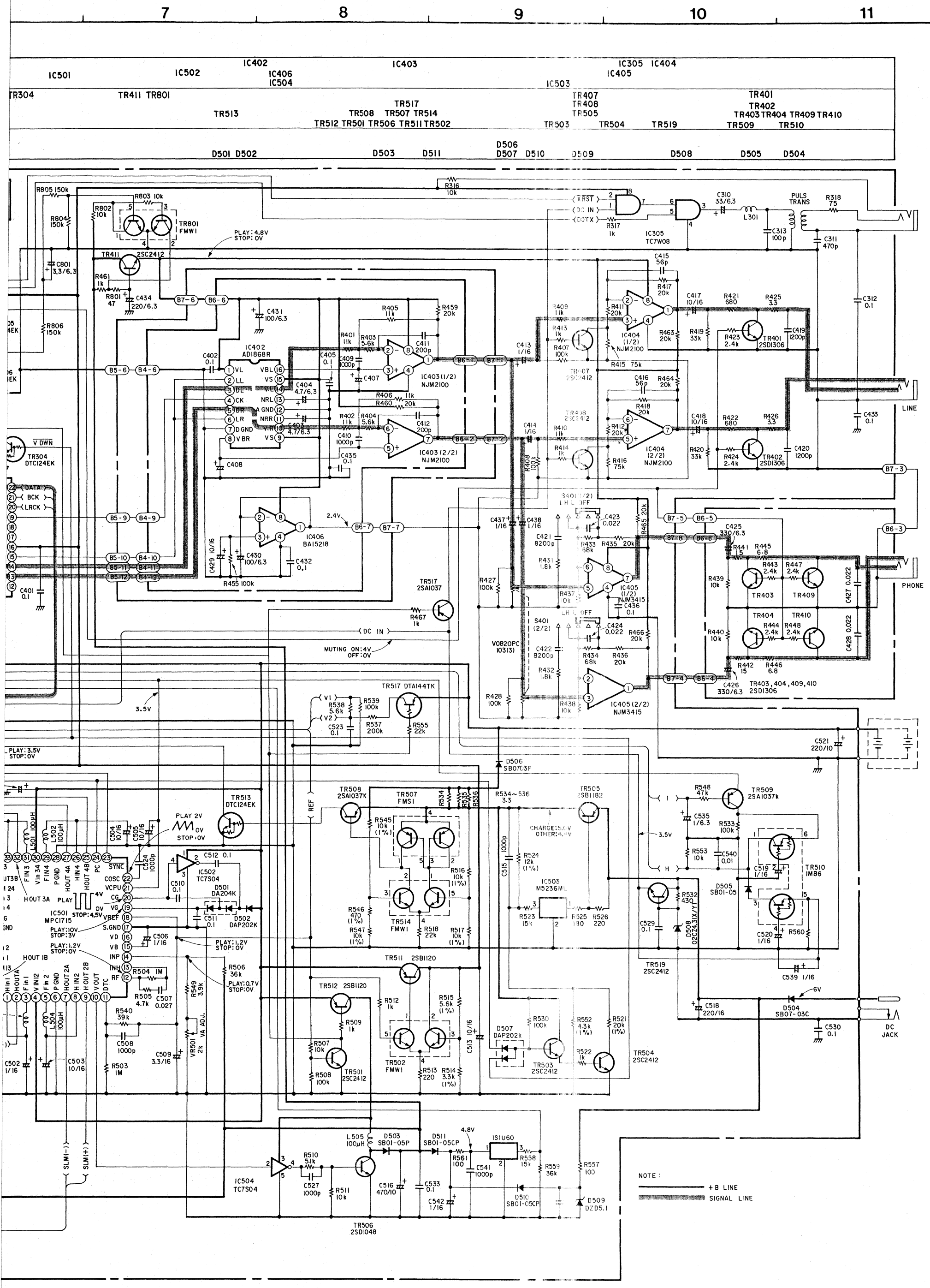


SCHEMATIC DIAGRAM

1 2 3 4 5 6

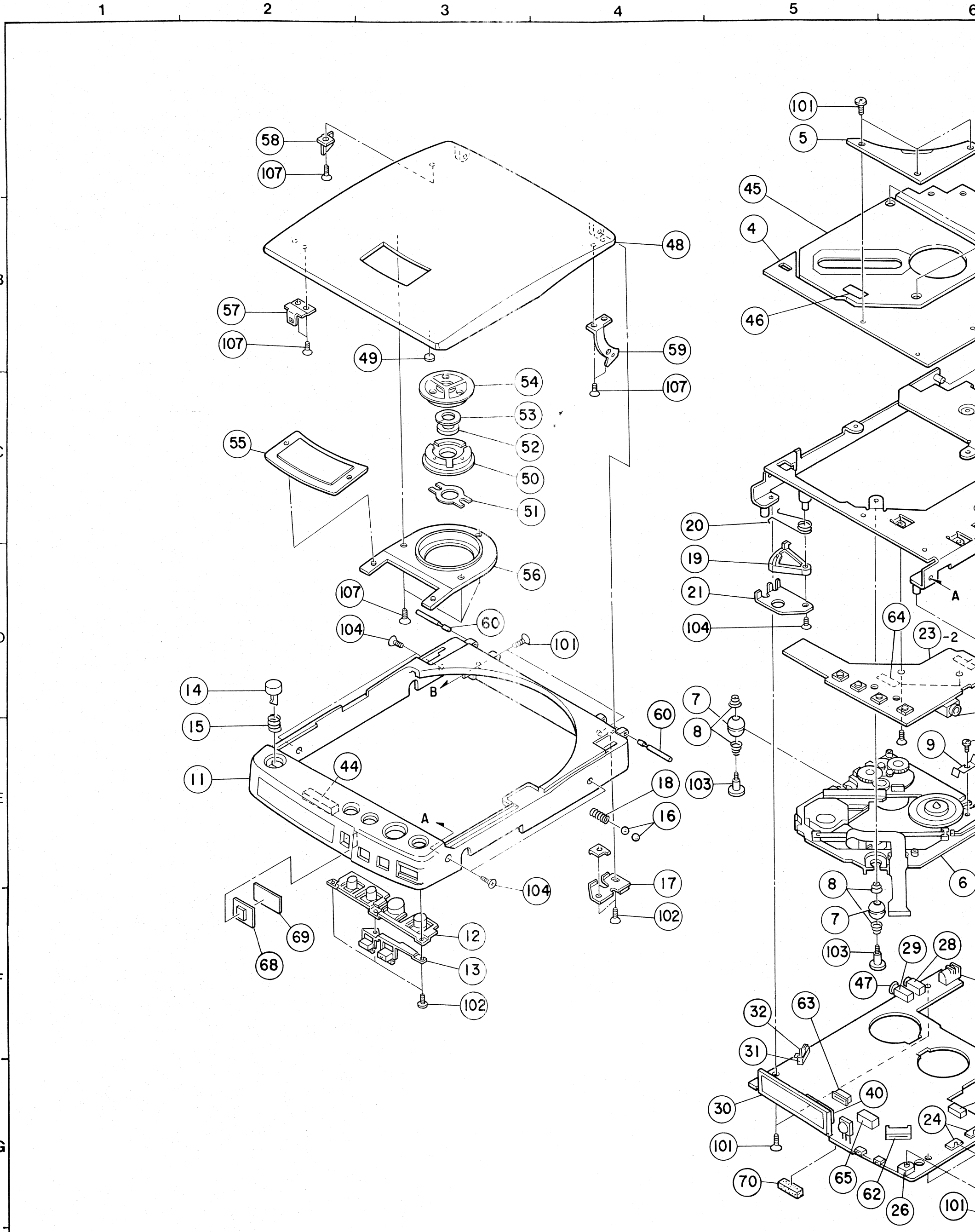
IC	IC301 IC201 IC304 IC203 IC303 IC202 IC401
Transistor	TR201 TR202 TR301 TR203 TR302 TR405 TR406 TR304
Diode (including LED)	D302 D301

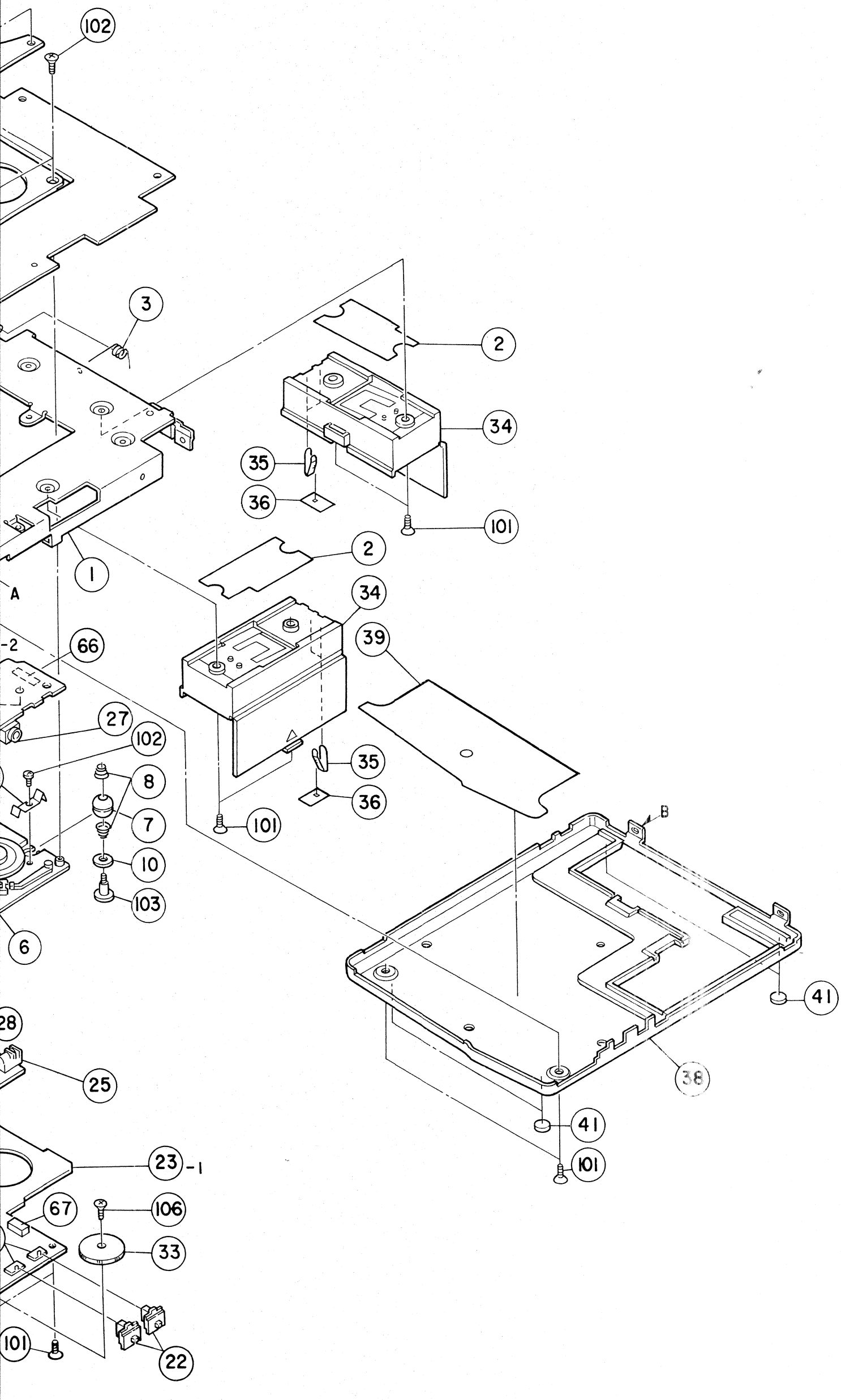




NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

EXPLODED VIEW OF CHASSIS AND CABINET




102
3
2
34
35
36
101
1
A
2
34
39
-2
66
27
102
35
36
8
7
101
B
10
103
6
41
28
25
38
41
23-1
67
106
33
101
22

PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty
1	411 0932 802	Chassis Ass'y		1
2	513 1620 008	Battery Box Seal		2
3	463 0633 209	Eject Spring		1
4	414 0539 408	Blind Sheet		1
5	146 1130 000	Disc Stopper		1
6	337 0011 001	CD-Mech. (KSM-220A)		1
7	462 0103 105	Damper		3
8	463 0634 004	Sub Spring		6
9	414 0566 002	Earth Spring		1
10	441 1200 000	Washer		1
11	103 1334 500	Body Ass'y		1
12	113 1274 403	Operate Knob (Top)		1
13	113 1275 208	Operate Knob (Side)		1
14	113 1313 209	Open Knob Ass'y		1
15	463 051 004	Spring		1
16	425 8011 009	Steel Ball (D3)		2
17	441 1331 005	Hold Plate (Lock) Ass'y		1
18	463 0638 204	Lock Spring		1
19	433 0542 205	Lock Anchor		1
20	463 0635 100	Anchor Spring		1
21	441 1157 108	Hold Plate (Open)		1
22	113 1456 108	SW Knob		2
23	2U- 2266 A	Main P.W.B. Unit Ass'y		1 S
24	212 1069 902	Slide Switch (SSSS8 2-3)		1
25	204 8389 008	DC Jack (Type 2)		1
26	211 0638 001	Variable Resistor	VR401	1
27	204 8390 000	Mini Jack (G)		1
28	204 8390 013	Mini Jack (R)		1
29	204 8390 026	Mini Jack (O)		1
30	393 4089 000	LCD Ass'y (FRD-6E49)		1
31	212 6016 002	Detector Switch		1
32	433 0563 103	Switch Lever		1
33	112 0621 203	Volume Dial		1
34	415 0530 303	Power Pack Case Ass'y		2
35	461 0546 002	Power Pack Spring		4
36	415 0538 004	Terminal Sheet		2
37	461 0562 002	Himeron Sheet		4
38	105 1008 005	B-Pan Cover Ass'y		1
39	414 0615 005	Insulating Sheet		1
40	122 0198 005	Protective Sheet		1
41	104 0215 100	Foot Plate		4
42	—	—		
43	504 0139 101	Protection Sheet		1
44	461 0357 013	Spacer Rubber		1
45	441 1137 209	Blind Cover (Mecha)		1
46	513 1611 004	Caution Label		1
47	441 1324 009	Clip		1
48	102 0400 304	Top Cover		1
49	104 0215 100	Foot Plate		1
50	421 0555 309	Disc Clamper (Bottom)		1
51	441 1193 007	Magnet Catcher		1
52	341 0035 002	Clamp Magnet		1
53	414 0541 001	Back Yoke		1
54	421 0556 201	Disc Clamper (Top)		1
55	143 0651 002	Cover Window		1
56	412 2894 103	Clamper Seizure		1
57	441 1159 300	Anchor Hole Plate		1
58	441 1160 302	Ejection Plate		1
59	441 1161 505	Lock Plate		1
60	422 0414 003	Hinge Shaft		2
61	—	—		
62	205 0702 000	12P FFC Con. Base		1
63	205 0500 040	4P FFC Con. Base		1
64	205 0583 009	12P Connector	5532-NA	1
65	205 0584 008	12PConnector	5533-NCPB	1
66	205 0583 025	8P Connector	5532 NA	1
67	205 0584 024	8P Connector	5532 NCPB	1
68	143 0738 006	Sensor Window		1
69	414 0616 101	Filter		1
70	461 0679 005	Rubber Cusion		1
SCREWS				
101	471 1828 001	Pan Screw 1.7×4	Black	17
102	473 8032 003	F Tapping Screw (B) 1.7×4	Black	9
103	471 9021 004	C Screw 1.7×2.2		3
104	471 2812 003	F Screw 1.7×4	Black	5
105	—	—		
106	471 2813 002	F Screw 1.4×3	Black	1
107	471 2312 016	F Screw 1.7×3	Black	8
108				
109				
110				
PACKING & ACCESSORIES (not included EXPLODED VIEW)				
151	505 0205 009	Envelope		1
152	203 2254 000	2P Pin-Mini Cord		1
153	515 0503 106	DAI Warranty Home		1
154	511 2169 009	Inst. Manual		1
155	522 0006 203	Soft Case		1
156	503 0850 005	Cushion		1
157	503 0855 107	Cushion		1
158	501 1412 006	Adapter Carton		1
159	392 0032 003	AC Adaptor (AA8EU)		1
160	502 0757 008	Pad		1
161	499 0206 004	Remocon RC-236		1
162	394 0022 006	Power Pack		1
163	501 1401 020	Carton Case		1
164	513 1338 015	Control Card Base		2
165	513 1349 004	Thermal Carbon Film		1
166	501 1402 016	Carton Case (Master)		1/6
167	502 0751 101	Inner Pad Ass'y		3
168	503 0873 008	Corner Pad		3
169	517 0039 029	ITF Label		6
170	*	Date Label		1
171	*	Rating Sheet		1
172				

ADDENDUM LIST

Ref. No.	Part Name & Description	Part No.					
		U.S.A. Model	Canada Model	Europe Model	U.K. Model	Australia Model	Asia Model
153	DAI Warranty Home	515 0503 106	—	—	—	—	—
154	Inst. Manual	511 2169 009	511 2170 001	511 2170 001	511 2170 001	511 2170 001	511 2170 001
159	AC Adaptor	393 0032 003 (AA8EU)	393 0032 003 (AA8EU)	392 0033 002 (AA8E2)	392 0034 001 (AA8EK)	392 0037 008 (AA8EA)	392 0035 000 (AA8E1)
169	ITF Label	517 0039 029	—	—	—	—	—
170	Date Label	513 1381 004	513 1596 116	513 1381 004	—	513 1381 004	—
171	Rating Sheet	513 1596 116	513 1654 016	513 1653 017	513 1631 013	513 1631 013	513 1631 013
180	Sheet	—	—	414 0576 005	414 0576 005	—	414 0576 005
181	Inst. Label	—	—	513 0985 003	513 0985 003	513 0985 003	—
182	DCI Warranty	—	515 0388 208	—	—	—	—
183	Laser Caution	—	—	513 17867 000	—	—	—

NOTE FOR PARTS LIST

- Part indicated with the mark " ⊙ " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "l" (i) to avoid mis-supplying.
- *Ordering part without stating its part number can not be supplied.*
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:

Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

NOTE FOR PARTS LIST

- Part indicated with the mark " ⊙ " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

- Refer to the following table for the codes of the resistors and capacitors appearing on the parts list.

• Resistors

Ex.: RN 14K 2E 182 G FR

(RN: Type; 14K: Shape and performance; 2E: Power; 182: Resistance; G: Allowable error; FR: Others)

RD : Carbon RC : Fixed RS : Metallic film RW : Winding RN : Metal film RK : Metal mixture	2B : 1/8W 2E : 1/4W 2H : 1/2W 3A : 1W 3D : 2W 3F : 3W 3H : 5W	F : ±1% G : ±2% J : ±5% K : ±10% M : ±20%	P : Pulse-resistant type NL : Low noise type NB : Non-burning type FR : Fuse resistor F : Lead wire forming

Resistance

1 8 2 ⇨ 1800Ω = 1.8kΩ

- 1 8 2: Indicates number of zeros after effective number
- 1 8: 2-digit effective number, decimal point indicated by R.
- Units: Ω

• Capacitors

Ex.: CE 04W 1H 2R2 M BP

(CE: Type; 04W: Shape and performance; 1H: Dielectric strength; 2R2: Capacity; M: Allowable error; BP: Others)

CE : Aluminum foil electrolyte CA : Aluminum solid electrolyte CS : Tantalum electrolyte CQ : Film CK : Ceramic CC : Ceramic CP : Oil CM : Mica CF : Metallized CH : Metallized	0J : 6.3V 1A : 10V 1C : 16V 1E : 25V 1V : 35V 1H : 50V 2A : 100V 2B : 125V 2C : 160V 2D : 200V 2E : 250V 2H : 500V 2J : 630V	F : ±1% G : ±2% J : ±5% K : ±10% M : ±20% Z : +80% −20% P : +100% −0% C : ±0.25pF D : ±0.5pF = : Others	HS : High stability type BP : Non-polar type HR : Ripple-resistant type DL : For charge and discharge HF : For assuring high frequency U : UL part C : CSA part W : UL-CSA type F : Lead wire forming

Capacity

2 R 2 ⇨ 2.2μF

- 2 R 2: 1-digit effective number, decimal point indicated by R.
- 2 R: 2-digit effective number, decimal point indicated by R.
- Units: μF, (for P, pF (μμF))
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

2U-2266A MAIN P.W.B UNIT PARTS LIST

Ref. No.	Part No.	Part Name	Remarks
IC201	262 1231 007	IC CXA1271Q	
IC202	262 1232 006	IC CXA1272Q	
IC203	263 0686 902	IC BA10358FT	
IC301	262 1389 001	IC CXD1167Q	
IC303	262 1483 004	IC HD40L4808	
IC304	263 0762 910	IC PST573LMT	
IC305	262 1508 905	IC TC7W08F	
IC401	262 1481 909	IC SM5840AS	
IC402	262 1482 908	IC AD1868R	
IC403,404	263 0758 908	IC NJM2100M	
IC405	263 0759 907	IC NJM3415M	
IC406	263 0615 902	IC BA15218F	
IC501	263 0688 007	IC MPC1715FU	
IC502	262 1230 901	IC TC7S04F	
IC503	263 0689 909	IC M5236ML	
IC504	262 1230 901	IC TC7S04F	
TR201	274 0153 901	Transistor 2SD1048	
TR202	271 0238 908	Transistor 2SA1037K(S/R)	
TR203	269 0055 900	Transistor DTA144EK	
TR301,302	271 0238 908	Transistor 2SA1037K(S/R)	
TR303	273 0384 900	Transistor 2SC2412(S)	
TR304	269 0102 905	Transistor DTC124EK	
TR401~404	274 0155 909	Transistor 2SD1306NE	
TR405	269 0055 900	Transistor DTA144EK	
TR406	269 0054 901	Transistor DTC144EK	
TR407,408	273 0384 900	Transistor 2SC2412K(S)	
TR409,410	274 0155 909	Transistor 2SD1306NE	
TR411	273 0384 900	Transistor 2SC2412K(S)	
TR412	271 0238 908	Transistor 2SA1037K(S/R)	
TR501	273 0384 900	Transistor 2SC2412K(S)	
TR502	278 0002 902	Transistor FMW1	
TR503,504	273 0384 900	Transistor 2SC2412K(S)	
TR505	272 0108 905	Transistor 2SB1182	
TR506	274 0153 901	Transistor 2SD1048TB(X6-X8)	
TR507	269 0005 905	Transistor FMSIT98	
TR508,509	271 0238 908	Transistor 2SA1037K(S/R)	
TR510	278 0004 900	Transistor IMB6T158	
TR511,512	272 0109 904	Transistor 2SB1120(E/G)	
TR513	269 0102 905	Transistor DTC124EK	
TR514	278 0002 902	Transistor FMW1	
TR517	269 0106 901	Transistor DTA144TK	
TR519	273 0384 900	Transistor 2SC2412K(S)	
TR801	278 0002 902	Transistor FMW1	
D301	276 0559 909	Diode DAP202K	
D501	276 0558 900	Diode DA204K	
D502	276 0559 909	Diode DAP202K	
D503	276 0561 900	Diode SB0105CP	
D504	276 0571 903	Diode SB07-03C	
D505	276 0561 900	Diode SB0105CP	
D506	276 0564 907	Diode SB07-03P	
D507	276 0559 909	Diode DAP202K	
D508	276 0587 900	Diode 02CZ4.3(X/Y)	
D509	276 0588 909	Diode 02CZ5.1(Y/Z)	
D501,511	276 0561 900	Diode SB0105CP	

Ref. No.	Part No.	Part Name	Remarks
RESISTORS GROUP (Note included Carbon Film ±5%, 1/4W Type. Refer to the Schematic Diagram for those Parts.)			
J429,430	247 0018 905	Chip Resistor 0ohm, 1/10W	RM73B--0R0K
J449~451	247 0018 905	Chip Resistor 0ohm, 1/10W	RM73B--0R0K
J801,802	247 1018 904	Chip Resistor 0ohm, 1/8W	RM73B2BR0K
J803,804	247 0018 905	Chip Resistor 0ohm, 1/10W	RM73B--0R0K
J805~808	247 1018 904	Chip Resistor 0ohm, 1/8W	RM73B2B0R0K
J809~815	247 0018 905	Chip Resistor 0ohm, 1/10W	RM73B--0R0K
R201	247 0013 900	Chip Resistor 220kohm, 1/10W	RM73B--224J
R202	247 0008 928	Chip Resistor 2.2kohm, 1/10W	RM73B--222J
R203	247 0002 966	Chip Resistor 10ohm, 1/10W	RM73B--100J
R204	247 0009 901	Chip Resistor 4.7kohm, 1/10W	RM73B--472J
R205	247 0010 929	Chip Resistor 15kohm, 1/10W	RM73B--153J
R206	247 0009 943	Chip Resistor 6.8kohm, 1/10W	RM73B--682J
R207	247 0010 961	Chp Resistor 22kohm, 1/10W	RM73B--223J
R208,209	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R210	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R211	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R212,213	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R214	247 0014 967	Chip Resistor 1Mohm, 1/10W	RM73B--105J
R215	247 0011 928	Chip Resistor 39kohm, 1/10W	RM73B--393J
R216	247 0008 960	Chip Resistor 3.3kohm, 1/10W	RM73B--332J
R217	247 0012 985	Chip Resistor 180kohm, 1/10W	RM73B--184J
R218	247 0012 969	Chip Resistor 150kohm, 1/10W	RM73B--154J
R219	247 0013 913	Chip Resistor 240kohm, 1/10W	RM73B--244J
R220	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R222	247 0011 928	Chip Resistor 39kohm, 1/10W	RM73B--393J
R223,224	247 0012 901	Chip Resistor 82kohm, 1/10W	RM73B--823J
R225	247 0010 961	Chip Resistor 22kohm, 1/10W	RM73B--223J
R226	247 0012 901	Chip Resistor 82kohm, 1/10W	RM73B--823J
R227	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R228	247 0013 997	Chip Resistor 510kohm, 1/10W	RM73B--514J
R229	247 0011 902	Chip Resistor 33kohm, 1/10W	RM73B--333J
R230	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R231	247 0006 920	Chip Resistor 330ohm, 1/10W	RM73B--331J
R232	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R233	247 0007 987	Chip Resistor 1.5kohm, 1/10W	RM73B--152J
R234	247 0004 993	Chip Resistor 91ohm, 1/10W	RM73B--910J
R235	247 0014 967	Chip Resistor 1Mohm, 1/10W	RM73B--105J
R236	247 0015 940	Chip Resistor 2.2Mohm, 1/10W	RM73B--225J
R237	247 0007 945	Chip Resistor 1kohm, 1/10W	RM73B--102J
R238	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R301	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R303~306	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R307,308	247 0009 901	Chip Resistor 4.7kohm, 1/10W	RM73B--472J
R309	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R310~315	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R316	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R317	247 0007 945	Chip Resistor 1Kohm, 1/10W	RM73B--102J
R318	247 0004 977	Chip Resistor 75ohm, 1/10W	RM73B--750J
R319	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R320	247 0011 960	Chip Resistor 56kohm, 1/10W	RM73B--563J
R321	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R322	247 0014 967	Chip Resistor 1Mohm, 1/10W	RM73B--105J
R324,325	247 0007 945	Chip Resistor 1kohm, 1/10W	RM73B--102J
R327~329	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R401,402	247 0009 998	Chip Resistor 11kohm, 1/10W	RM73B--113J

Ref. No.	Part No.	Part Name	Remarks
R403,404	247 0009 927	Chip Resistor 5.6kohm, 1/10W	RM73B--562J
R405,406	247 0009 998	Chip Resistor 11kohm, 1/10W	RM73B--113J
R407,408	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R409,410	247 0009 998	Chip Resistor 11kohm, 1/10W	RM73B--113J
R411,412	247 0009 983	Chip Resistor 10kohm, 1/10W	RM73B--103J
R413,414	247 0007 945	Chip Resistor 1kohm, 1/10W	RM73B--102J
R415,416	247 0010 903	Chip Resistor 12kohm, 1/10W	RM73B--123J
R417,418	247 0010 961	Chip Resistor 22kohm, 1/10W	RM73B--223J
R419,420	247 0011 902	Chip Resistor 33kohm, 1/10W	RM73B--333J
R421,422	247 0007 903	Chip Resistor 680ohm, 1/10W	RM73B--681J
R423,424	247 0008 931	Chip Resistor 2.4kohm, 1/10W	RM73B--242J
R425,426	247 0001 941	Chip Resistor 3.3ohm, 1/10W	RM73B--3R3K
R427,428	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R431,432	247 0008 902	Chip Resistor 1.8kohm, 1/10W	RM73B--182J
R433,434	247 0011 986	Chip Resistor 68kohm, 1/10W	RM73B--683J
R435,436	247 0010 958	Chip Resistor 20kohm, 1/10W	RM73B--203J
R437,438	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R439,440	247 0007 945	Chip Resistor 1kohm, 1/10W	RM73B--102J
R441,442	247 0002 924	Chip Resistor 6.8ohm, 1/10W	RM73B--6R8K
R443,444	247 0008 931	Chip Resistor 2.4kohm, 1/10W	RM73B--242J
R445,446	247 0002 924	Chip Resistor 6.8ohm, 1/10W	RM73B--6R8K
R447,448	247 0008 931	Chip Resistor 2.4kohm, 1/10W	RM73B--242J
R454,455	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R456	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R459,460	247 0010 958	Chip Resistor 20kohm, 1/10W	RM73B--203J
R461	247 0007 945	Chip Resistor 1kohm, 1/10W	RM73B--102J
R463~466	247 0010 958	Chip Resistor 20kohm, 1/10W	RM73B--203J
R467	247 0007 945	Chip Resistor 1kohm, 1/10W	RM73B--102J
R501	247 0008 928	Chip Resistor 2.2kohm, 1/10W	RM73B--222J
R502	247 0008 960	Chip Resistor 3.3kohm, 1/10W	RM73B--332J
R503,504	247 0014 967	Chip Resistor 1Mohm, 1/10W	RM73B--105J
R505	247 0009 901	Chip Resistor 4.7kohm, 1/10W	RM73B--472J
R506	247 0011 915	Chip Resistor 36kohm, 1/10W	RM73B--363J
R507	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R508	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R509	247 0007 945	Chip Resistor 1kohm, 1/10W	RM73B--102J
R510	247 0009 914	Chip Resistor 5.1kohm, 1/10W	RM73B--512J
R511	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R512	247 0007 945	Chip Resistor 1kohm, 1/10W	RM73B--102J
R513	247 0005 989	Chip Resistor 220ohm, 1/10W	RM73B--221J
R514	247 0019 962	Chip Resistor 3.3kohm, 1/10W	RM73B--332J
R515	247 0019 959	Chip Resistor 5.6kohm, 1/10W	RM73B--562J
R516,517	247 0019 917	Chip Resistor 10kohm, 1/10W	RM73B--103F
R518	247 0010 961	Chip Resistor 22kohm, 1/10W	RM73B--223J
R521	247 0010 958	Chip Resistor 20kohm, 1/10W	RM73B--203J
R522	247 0007 945	Chip Resistor 1kohm, 1/10W	RM73B--102J
R523	247 0010 929	Chip Resistor 15kohm, 1/10W	RM73B--153J
R524	247 0019 920	Chip Resistor 11kohm, 1/10W	RM73B--113J
R525	247 0005 963	Chip Resistor 180ohm, 1/10W	RM73B--181J
R526	247 0005 989	Chip Resistor 220ohm, 1/10W	RM73B--221J
R527	247 0005 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R530	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R532	247 0006 959	Chip Resistor 430ohm, 1/10W	RM73B--431J
R533	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R534~536	247 1001 940	Chip Resistor 3.3ohm, 1/8W	RM73B2B3R3K
R537	247 0019 975	Chip Resistor 200kohm, 1/10W	RM73B--204F
R538	247 0019 959	Chip Resistor 5.6kohm, 1/10W	RM73B--562F

Ref. No.	Part No.	Part Name	Remarks
R539	247 0019 988	Chip Resistor 100kohm, 1/10W	RM73B--104F
R540	247 0011 928	Chip Resistor 39kohm, 1/10W	RM73B--393J
R545	247 0019 917	Chip Resistor 10kohm, 1/10W	RM73B--103F
R546	247 0019 904	Chip Resistor 470ohm, 1/10W	RM73B--471F
R547	247 0019 917	Chip Resistor 10kohm, 1/10W	RM73B--103F
R548	247 0011 944	Chip Resistor 47kohm, 1/10W	RM73B--473J
R549	247 0008 986	Chip Resistor 3.9kohm, 1/10W	RM73B--392J
R552	247 0019 933	Chip Resistor 4.3Kohm, 1/10W	RM73B--432F
R553	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R555	247 0010 961	Chip Resistor 22kohm, 1/10W	RM73B--223J
R557	247 0005 905	Chip Resistor 100ohm, 1/10W	RM73B--101J
R558	247 0010 929	Chip Resistor 15kohm, 1/10W	RM73B--153J
R559	247 0011 915	Chip Resistor 36kohm, 1/10W	RM73B--363J
R560	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R561	247 0005 905	Chip Resistor 100ohm, 1/10W	RM73B--101J
R801	247 0004 922	Chip Resistor 47ohm, 1/10W	RM73B--470J
R802,803	247 0009 985	Chip Resistor 10kohm, 1/10W	RM73B--103J
R804~806	247 0012 969	Chip Resistor 150kohm, 1/10W	RM73B--154J
VR201	211 6084 905	Semi Fixed Resistor 2kohm	V04PB202
VR202~205	211 6086 903	Semi Fixed Resistor 20kohm	V04PB203M
VR401	211 0638 001	Variable Resistor 10kohm	V0820PC103
VR501	211 6084 905	Semi Fixed Resistor 2kohm	V04PB202
CAPACITORS GROUP			
C203	257 0002 989	Chip Ceramic 18PF/50V	CC73SL1H180J
C204	257 2004 901	Chip Tantal 1μF/16V	CS77B1C010M
C205	257 4000 929	Chip Elect. 22μF/6.3V	CE79W0J220M
C206	257 0009 937	Chip Ceramic 2700PF/50V	CK73B1H272K
C207	257 0010 900	Chip Ceramic 0.01μF/50V	CK73B1H103K
C208	257 1011 966	Chip Ceramic 0.033μF/50V	CK73B1H333K
C209	257 0007 942	Chip Ceramic 1500PF/50V	CC73SL1H152J
C210	257 1011 966	Chip Ceramic 0.033μF/50V	CK73B1H333K
C211	257 0005 960	Chip Ceramic 270PF/50V	CC73SL1H271J
C212	257 2006 909	Chip Tantal 0.47μF/25V	CS77B1ER47M
C213	257 1011 966	Chip Ceramic 0.033μF/50V	CK73B1H333K
C214	257 0009 966	Chip Ceramic 4700PF/50V	CK73B1H472K
C215,216	257 1013 993	Chip Ceramic 0.1μF/25V	CK73B1E104K
C217	257 4005 908	Chip Elect. 10μF/16V	CE79W1C100M
C218	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C219	257 2004 901	Chip Tantal 1μF/16V	CC77B1C010M
C221	257 4000 929	Chip Elect. 22μF/6.3V	CE79W0J220M
C222	257 1013 993	Chip Ceramic 0.1μF/25V	CK73B1E104K
C223	257 0004 961	Chip Ceramic 100PF/50V	CC73SL1H101J
C225,226	257 1013 993	Chip Ceramic 0.1μF/25V	CK73B1E104K
C227	257 4000 932	Chip Ceramic 100μF/6.3V (MF)	CE79W0J101M
C228,229	257 0004 961	Chip Ceramic 100PF/50V	CC73SL1H101J
C230	257 0009 953	Chip Ceramic 3900PF/50V	CK73B1H392J
C231, C232	257 0002 921	Chip Elect. 10PF/50V	CE73SL1H100D
C233	257 1007 909	Chip Elect. 1000PF/50V	CE73SL1H102J
C234	257 0010 900	Chip Ceramic 0.01μF/50V	CK73B1H103K
C237	257 0001 951	Chip Ceramic 3PF/50V	CC73SL1H3R0C
C238	257 0004 961	Chip Ceramic 100PF/50V	CC73SL1H101J
C301	257 0007 900	Chip Ceramic 1000PF/50V	CC73SL1H102J
C303	257 2006 909	Chip Tantal 0.47μF/25V	CS77B1ER47M

Ref. No.	Part No.	Part Name	Remarks
C304,305	257 0005 944	Chip Ceramic 220PF/50V	CC73SL1H221J
C306	257 1013 993	Chip Ceramic 0.1μF/25V	CK73B1E104K
C307,308	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C309	257 0007 900	Chip Ceramic 1000PF/50V	CC73SL1H102J
C310	257 2009 906	Chip Tantal 33μF/7V (TMC-M)	CS77B--330M
C311	257 0006 927	Chip Ceramic 470PF/50V	CC73SL1H471J
C312	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C313	257 0004 961	Chip Ceramic 100PF/50V	CC73SL1H101J
C314	257 2004 943	Chip Tantal 10μF/16V	CS77B1C100M
C401,402	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C403,404	257 2003 915	Chip Tantal 4.7μF/10V	CS77B1A4R7M
C405~408	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C409,410	257 0007 900	Chip Ceramic 1000PF/50V	CC73SL1H102J
C411,412	257 0005 931	Chip Ceramic 200PF/50V	CC73SL1H201J
C413,414	257 4002 914	Chip Elect. 1μF/50V (MF)	CE79W1H010M
C415,416	257 0007 903	Chip Ceramic 56PF/50V	CC73SL1H560J
C417,418	257 4005 908	Chip Elect. 10μF/16V	CE79W1C100M
C419,420	257 0007 926	Chip Ceramic 1200PF/50V	CC73SL1H122J
C421,422	257 0009 995	Chip Ceramic 8200PF/50V	CC73SL1H822K
C423,424	257 1011 940	Chip Ceramic 0.022μF/50V	CK73B1H223K
C425,426	257 4000 929	Chip Elect. 22μF/6.3V	CE79W0J220M
C427,428	257 1011 940	Chip Ceramic 0.022μF/50V	CK73B1H223K
C429	257 4005 908	Chip Elect. 10μF/16V	CE79W1C100M
C430	257 4000 932	Chip Elect. 100μF/6.3V(MF)	CE79W0J101M
C432,433	257 0003 904	Chip Ceramic 22PF/50V	CC73SL1H220J
C434	254 4360 000	Electrolytic 220μF/10V	CE04W1A221M
C435,436	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C439,440	257 1013 993	Chip Ceramic 0.1μF/25V	CK73B1E104K
C441	257 4000 945	Chip Elect 33μF/6.3V (MF)	CE79WOJ330M
C442	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C501,502	257 2004 901	Chip Tantal 1μF/16V	CS77B1C010M
C503~505	257 2004 943	Chip Tantal 10μF/16V	CS77B1C100M
C506	257 2004 901	Chip Tantal 1μF/16V	CS77B1C010M
C507	257 1011 953	Chip Ceramic 0.027μF/50V	CK73B1H237K
C508	257 0007 900	Chip Ceramic 1000PF/50V	CC73SL1H102J
C509	257 2004 914	Chip Tantal 3.3μF/16V	CC77B1C3R3M
C510~512	257 1013 993	Chip Ceramic 0.1μF/25V	CK73B1E104K
C513	257 4005 908	Chip Elect. 10μF/16V	CE79W1C100M
C514	257 0014 935	Chip Ceramic 0.1μF/25V	CK73B1E104Z
C515	257 0007 900	Chip Ceramic 1000PF/50V	CC73SL1H102J
C516	254 4250 042	Electrolytic 330μF/6.3V (SME)	CE04W0J331M
C517	257 2004 901	Chip Tantal 1μF/16V	CS77B1C010M
C518	254 4359 008	Electrolytic 220μF/16V	CE04W1C221M
C519,520	257 2004 914	Chip Tantal 1μF/16V	CS77B1C010M
C521	254 4404 005	Electrolytic 220μF/10V (SMG)	CE04W1A221M
C523	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C524	257 0007 900	Chip Ceramic 1000PF/50V	CC73SL1H102J
C526	257 2002 916	Chip Tantal 6.8μF/7V	CS77B--6R8M
C527	257 0007 900	Chip Ceramic 1000PF/50V	CC73SL1H102J
C529,530	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C533	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C534	257 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z
C535	257 2004 901	Chip Tantal 1μF/16V	CS77B1C010M
C539	257 2004 901	Chip Tantal 1μF/16V	CS77B1C010M
C540	257 0010 900	Chip Ceramic 0.01μF/50V	CK73B1H103K
C541	257 0007 900	Chip Ceramic 1000PF/50V	CC73SL1H102J
C542	257 2004 901	Chip Tantal 1μF/16V	CS77B1C010M

Ref. No.	Part No.	Part Name	Remarks	Q'ty
C801	257 2004 930	Chip Tantal 3.3μF/16V	CS77B1C3R3M	
OTHER PARTS				**Q'ty**
	—	(P.W. Board)		(1)
L501~505	235 0075 903	Inductor 100mH	LQH3C101K	5
CF301	261 0112 001	Ceramic Vibrater CSB800JB		1
X001	399 0142 004	X'tal (16.9344MHz)	CX5F	1
S307,401	212 1069 902	Slide Switch		2
	231 8068 004	Plus Trans		1
	204 8389 008	DC Jack (Type 2)		1
	499 0205 005	IS1U60		1
S301~304	212 4749 009	Tact Switch		4
S305,306	212 4746 002	Tact Switch		2
	204 8390 000	Mini Jack (G)		1
	204 8390 013	Mini Jack (R)		1
	204 8390 026	Mini Jack (O)		1
	393 4089 000	LCD Ass'y (FRD-6E49)		1
	212 6016 002	Detector Switch		1
	433 0563 006	Switch Lever		1
CB002	205 0500 040	4P FFC Conn. Base		1
CB001	205 0702 000	12P FFC Conn. Base (L)		1
CB004	205 0583 009	12P 5532-NA		1
CB005	205 0584 008	12P 5533-NCPB		1
CB006	205 0583 025	8P 5532-NA		1
CB007	205 0584 024	8P 5533-NCPB		1